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UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL AND HUMAN SCIENCES

Southampton Education School

**Communication, Interaction and Collaboration by Female Saudi Secondary
School Students Arising Through Asynchronous E-learning**

By

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ABSTRACT

A considerable current challenge facing Saudi schools is the need to change in order to meet the demands of the future and to develop new and different learning opportunities for the coming generations of learners. This research project is a case study that focuses on the use of an asynchronous e-learning tool, exploring a strategy used in one secondary school in Saudi Arabia to investigate students' communication, interaction and collaboration. The project reflects upon the challenges of effectively using new learning technology, and encouraging effective communication, interaction and collaboration between students. The study also investigates the effect of using a variety of sources of information in order to pursue a better understanding of the tasks, benefits and challenges associated with using online forum technology by teenage girls being taught in traditional Saudi classrooms.

A qualitative methodology was employed. A group of thirty female students in a school in Boraydah, Saudi Arabia, participated in an online forum to study a specific unit on the Geography curriculum during the second semester of the academic year 2012-2013. Online observation, focus groups and individual semi-structured interviews were conducted to investigate students' e-learning experiences and in particular, their communication, interaction and collaboration. Knowledge Building Theory and Communities of Practice were used as theoretical frameworks for the case study. Forum discussions were analysed using Systematic Content Analysis, and focus group and interview data were analysed thematically.

The response of the students indicate that prior to the intervention the level of interaction both inside the classroom and outside the classroom was much lower and that poor level of interaction, they felt, had a negative influence on their learning. They recognise the value of collaboration and the experience of the online forum encourages them to communicate more in school and in the classroom. The research also shows that students using the online forum develop features of a community of practice.

I hope that the results of this research can assist teachers, schools and the Ministry of Education in Saudi Arabia to identify how to develop new teaching and learning approaches, increase student communication and interaction, and integrate new technological methods in schools for the benefit of the coming generations of teachers and learners.

Table of Contents

LIST OF FIGURES.....	VII
LIST OF TABLES	IX
DECLARATION OF AUTHORSHIP	X
DEDICATION	XI
ACKNOWLEDGEMENTS.....	XII
CHAPTER 1: INTRODUCTION	1
1.1INTRODUCTION	1
1.2 STATEMENT OF THE PROBLEM	4
1.3 RATIONALE FOR THIS STUDY.....	6
1.4 AIM AND OBJECTIVES OF THE STUDY AND RESEARCH QUESTIONS.....	7
1.5 SIGNIFICANCE OF THE STUDY	8
1.6 THESIS STRUCTURE	9
CHAPTER 2: SAUDI CONTEXT	11
2.1 INTRODUCTION.....	11
2.2 SAUDI ARABIA	11
.....	12
2.2.1 Basic demographics.....	12
2.2.2 Religion and culture	13
2.2.3 Socioeconomics of Saudi Arabia	13
2.3 EDUCATION SYSTEM IN SAUDI ARABIA	14
2.3.1 History of education in Saudi Arabia.....	15
2.3.2 Nature of education	19
2.3.3 Secondary school level, curricula and classroom distribution	20
2.3.4 School day.....	21
2.3.5 The Textbook.....	21
2.3.6 The educational supervision	22
2.3.7 Curriculum Development.....	23
2.4 DIFFICULTIES OF EDUCATIONAL SYSTEM IN SAUDI ARABIA.....	24
2.5 INTERNET IN SAUDI ARABIA	29
2.5.1 ICT in Saudi context.....	31
2.6 INITIATIVES TAKEN BY THE SAUDI GOVERNMENT	33
2.6.1 WATANI Project 5.....	34
2.6.2 National E-learning and Distance Learning (NELC).....	34
2.6.3 National Communications and Information Technology Plan (NCITP)	36

2.7 LIMITATIONS OF E-LEARNING	36
2.8 CONCLUSION	38
CHAPTER 3: LITERATURE REVIEW	40
3.1 INTRODUCTION.....	40
3.2 LEARNING THEORIES	40
3.3 THEORETICAL FRAMEWORK	43
3.3.1 Knowledge Building Theory	43
3.3.2 Learning communities: Communities of Practice	45
3.4 ICT IN EDUCATION	48
3.5 ICT IN DEVELOPING AND DEVELOPED COUNTRIES.....	50
3.6 TWENTY FIRST CENTURY LEARNERS	51
3.6.1 The impact of the Internet on 21 st century learners	52
3.7 ONLINE COMMUNITIES	55
3.8 E-LEARNING	58
3.8.1 E-Learning: An international perspective	60
3.9 EDUCATION IN LIGHT OF E-LEARNING.....	67
3.10 SYNCHRONOUS AND ASYNCHRONOUS E-LEARNING	69
3.10.1 Asynchronous interactions for education.....	69
3.10.2 The role of teachers in asynchronous e-learning	72
3.11 FORUMS IN TEACHING AND LEARNING	74
3.12 BENEFITS AND LIMITATIONS OF E-LEARNING.....	75
3.13 E-LEARNING IN SAUDI ARABIA.....	79
3.13.1 Development of asynchronous e-learning in Saudi Arabia	81
3.14 CONCLUSION	82
CHAPTER 4: RESEARCH METHODOLOGY.....	84
4.1 INTRODUCTION.....	84
4.2 OVERVIEW OF THE STUDY	84
4.3 THE NATIONAL GEOGRAPHY CURRICULUM IN SAUDI ARABIA	87
4.4 OBJECTIVES AND QUESTIONS OF THE STUDY	88
4.4.1 Research objectives.....	88
4.4.2 Research questions.....	89
4.5 RESEARCH PARADIGM	89
4.6 RESEARCH DESIGN	92
4.6.1 Qualitative research	92
4.6.2 Research strategy: case study	93
4.6.3 Research methods.....	95

4.7 THE STRUCTURE OF THE RESEARCH TOOL (THE FORUM)	104
4.7.1 <i>Designing of the forum</i>	105
4.8 ETHICAL CONSIDERATIONS	112
4.9 SAMPLING	114
4.10 DATA ANALYSIS	115
4.10.1 <i>Content analysis (SOLO taxonomy)</i>	116
4.10.2 <i>Discourse analysis</i>	117
4.10.3 <i>Thematic analysis</i>	118
4.11 VALIDITY AND RELIABILITY	123
4.12 SUMMARY	125
CHAPTER 5: FINDINGS	126
5.1 INTRODUCTION	126
5.2 STUDENTS' PERCEPTIONS OF THEIR CLASSROOM EXPERIENCE	128
5.2.1 <i>Students' perception of communication, interaction and collaboration between students in the class</i>	130
5.2.2 <i>Students' perception of communication, interaction and collaboration between students outside the class and the school</i>	133
5.2.3 <i>Perceptions of factors affecting students' communication</i>	135
5.2.4 <i>Students' perceptions of their background knowledge</i>	147
5.3 STUDENTS' PERCEPTIONS OF THE FORUM INTERVENTION	152
5.3.1 <i>Perceptions of the forum intervention in relations to interaction and communication</i>	154
5.3.2 <i>Using the forum by students</i>	160
5.3.3 <i>Forum's impact on participants</i>	164
5.4 STUDENTS' REACTION TO THE FORUM	171
5.4.1 <i>How much is used</i>	171
5.4.2 <i>Usage of the forum</i>	175
5.5 STUDENTS' REACTION TO THE FORUM IN DEVELOPING FEATURES ASSOCIATED WITH COMMUNITIES OF PRACTICE	184
5.6 CONCLUSION	191
CHAPTER 6: DISCUSSION	193
6.1 INTRODUCTION	193
6.2 PARTICIPANT'S CLASSROOM EXPERIENCE	193
6.2.1 <i>Students' perceptions of communication and interaction</i>	197
6.2.2 <i>Perceptions of their background knowledge</i>	199
6.3 PERCEPTIONS OF FORUM INTERVENTION	200
6.3.1 <i>Perceptions on communication and interaction after intervention</i>	201
6.3.2 <i>Students' knowledge</i>	203
6.4 STUDENTS' REACTION TO THE FORUM	206
6.5 USING THE FORUM	207

6.6 CONCLUSION	213
CHAPTER 7: RESEARCH CONCLUSION	214
7.1 INTRODUCTION.....	214
7.2 GENERAL OVERVIEW	214
7.3 RESEARCH FINDINGS	215
<i>7.3.1 Students' perceptions of their classroom experience</i>	<i>215</i>
<i>7.3.2 Students' perceptions of the forum intervention.....</i>	<i>217</i>
<i>7.3.3 Students' reaction to the forum.....</i>	<i>217</i>
7.4 CONTRIBUTION TO KNOWLEDGE.....	218
7.5 THEORETICAL CONTRIBUTION	220
7.6 RESEARCH RECOMMENDATIONS.....	222
<i>7.6.1 Changing in the role and policy of the Ministry of Education</i>	<i>222</i>
<i>7.6.2 Change in the role of schools.....</i>	<i>223</i>
<i>7.6.3 Students' training.....</i>	<i>224</i>
<i>7.6.4 Infrastructures and educational tools.....</i>	<i>224</i>
7.7 RESEARCH LIMITATIONS.....	224
7.8 FURTHER RESEARCH	225
7.9 CONCLUSION	226
REFERENCES.....	228
APPENDICES.....	266
APPENDIX 1 FORUM ONLINE-OBSERVATION SCHEDULE.....	CCLXVII
APPENDIX 2: PERMISSION OF THE MINISTRY OF EDUCATION IN SAUDI ARABIA	CCLXIX
APPENDIX 3: CONSENT FORM	CCLXX
APPENDIX 5: PARENTS' CONSENT FORM	CCLXXIII
APPENDIX 7: SOLO TAXONOMY ANALYSIS OF GROUP 1.....	CCLXXV
APPENDIX 8: SOLO TAXONOMY ANALYSIS OF GROUP 2.....	CCLXXX
APPENDIX 9: SOLO TAXONOMY ANALYSIS OF GROUP 3.....	CCLXXXV
APPENDIX 10: SOLO TAXONOMY ANALYSIS OF GROUP 4.....	CCXCI
APPENDIX 11: SOLO TAXONOMY ANALYSIS OF GROUP 5.....	CCXCVIII

List of Figures

Figure 2.1	Location of Saudi Arabia in the world.....	12
Figure 2.2	Distribution of students in public schools in Saudi Arabia.....	17
Figure 2.3	Internet usage detail in Saudi Arabia.....	31
Figure 3.1	Wenger's model: components of Community of Practice within the e-learning process	46
Figure 4.1	Homepage of the forum.....	104
Figure 4.2	Log on page.....	106
Figure 4.3	Log off page.....	106
Figure 4.4	The message to contact the researcher.....	107
Figure 4.5	Five groups in main page.....	107
Figure 4.6	A message from the researcher.....	108
Figure 4.7	Sharing information by one of participants.....	109
Figure 4.8	Three participants on one subject.....	110
Figure 4.9	Networking between the students.....	111
Figure 4.10	An icon that students can use in order to contact.....	112
Figure 4.11	Main themes and sub-themes of research data.....	122
Figure 4.12	The Relationship between the research aim, questions and themes...	123
Figure 5.1	Main themes of research data.....	127
Figure 5.2	Sub-themes of the Students' perceptions of their classroom experience	129

Figure 5.3	Students' seats in the classroom.....	146
Figure 5.4	Sub-themes of the Students' perceptions of the forum intervention...	153
Figure 5.5	An interaction on the forum.....	162
Figure 5.6	Student check the information.....	162
Figure 5.7	Student urges her colleagues to participate.....	163
Figure 5.8	Information provided by student.....	166
Figure 5.9	The student provides information about weather in Switzerland.....	169
Figure 5.10	Student invites others at the weekend.....	169
Figure 5.11	Student apologies for not being in contact.....	170
Figure 5.12	First stage prestructural stage.....	181
Figure 5.13	Unistructural stage.....	182
Figure 5.14	Unistructural stage.....	182
Figure 5.15	Multistructural stage.....	183
Figure 5.16	Relational stage.....	183
Figure 5.17	Fifth stage extended abstract.....	184
Figure 5.18	Student welcomes other students.....	188
Figure 5.19	One participant provided about Vienna.....	190

List of Tables

Table 3.1	Lessons of implementing e-learning experiences in some developing countries.....	66
Table 3.2	The definitions, advantages and challenges of e-learning.....	78
Table 4.1	Phases of study.....	86
Table 4.2	Timeline of data collection.....	96
Table 4.3	Forum online-observation schedules.....	98
Table 4.4	Phases of the data analysis.....	115
Table 4.5	Discourse analysis categories.....	118
Table 5.1	The discourse analysis table.....	171
Table 5.2	An example of SOLO taxonomy: first group.....	176

Declaration of Authorship

I, HEND Abdulaziz Aldobaikhi, declare that this thesis entitled:

Communication, Interaction and Collaboration by Female Saudi Secondary School Students Arising Through Asynchronous E-learning.

And the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. Either none of this work has been published before submission, or parts of this work have been published as: [please list references below]:

Signed:

Date:

Dedication

To

The soul of “my parents”

Who have passed away. They have spent their life waiting for this moment to happen. I really wish that they were still alive to see the achievement that I have accomplished in both my social life and in my career.

To

My husband “Saleh”

For the encouragement and support that he gave me through the past years. Without his passion, I wouldn't have completed this thesis.

To

My lovely and beloved kids “Farah, Maali, Rayda, Alwaleed and Asma”

Who gave me the ambition to complete my Ph.D They suffered from not only being away from their mother, but also from being away from their family and country. I hope that when they grow up, they feel proud of their mother.

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Chapter 1: Introduction

1.1 Introduction

The rapid changes in knowledge production and technology have impacted several aspects of modern life and the area of education is no exception. Such changes and developments have raised awareness among educators for the need for new pedagogical and learning approaches (Bates, 2005; Zhang and Nunamaker, 2003) in order to keep education abreast with other developments and to expand current knowledge and increasing communication, interaction and collaboration. Therefore, integrating information and communication technology (ICT) in various applications has become a necessity for educational systems, requiring a significant shift in the goals and objectives they endeavour to achieve (Cuttance and Stokes, 2000; Srivastava and Reddy, 2002; Quinlan, 2013). The shift should take into account the requirements and demands of the 21st century with a need for a pedagogical shift from teacher-centred learning to more interactive, student-centred, electronic learning paradigms, in which learners seek out, engage with and critically analyse, explore and discuss information themselves (Alexander, 2001; Trilling and Hood, 2001; Collins and Halverson, 2009; Thaung, 2012).

One significant change in the education landscape is the emergence of e-learning. Technological developments have paved the way for new innovative tools and approaches to be adopted by education systems worldwide. 'E-learning', 'blended learning', 'mobile learning', 'networking learning' (White, 2003) and 'flipped learning' are examples of new trends in education which rely heavily on new technologies. The term 'e-learning' refers to new approaches of teaching and learning. Introducing e-learning to the learning process involves receiving information and delivering learning materials through the use of electronic devices, independent of time and place (Hill, 2008; Holmes and Gardner, 2006). Simultaneously with the development of ICT, web-based systems provide a medium to deliver instruction and enable communication between teachers and students; a method known as 'web-based instruction' (WBI) (Peraya, 1995).

In this context, Smith and Regan (1999) define instruction as 'the delivery of information and activities that facilitate learners' attainment of intended, specific learning goals' (p.11). Thus,

students can navigate the Internet to access, retrieve, communicate and interact with information and allow them to learn remotely; anytime and anywhere (Zhang *et al.*, 2004). Given the rapid growth in integrating ICT and online educational curricula worldwide, e-learning has become a tool through which to acquire information much more quickly and in a much more interactive, convenient way.

E-learning has captured a great deal of interest among educators around the world, not only because of the way students actively learn, but also in terms of how they acquire knowledge remotely (Zhang *et al.*, 2003) although using technology in education has several cautions and warnings (Selwyn, 2014). Selwyn (2014) argued that using technology in education has been narrowing, rather than expanding, what students learn, and turning education from persistent individual relationships between teachers and students into quantifiable market economies. However, some others argued that using technology in education has great benefits for students. For example, e-learning enables students to take greater responsibility for the educational process by developing self-efficacy and effective knowledge construction and interaction (McCoy, 2010). In such contexts, learners can take advantage of the tools provided in order to actively improve their own knowledge, as well as enhance their cognitive abilities. Participating in an e-learning community generates a substantial increase in access to information, and can develop the learner's ability and skills to learn on their own, beyond the limits of a typical physical classroom environment (Rosenburg, 2001; Rovai, 2000).

E-learning is also influenced by the socio-economic background and cultural perspectives of communities, particularly in the developing world where access to ICT and web-based facilities is limited due to various challenges (Gunawardana, 2005). Thus, blended learning can play an important role in terms of integrating these tools within traditional teacher-centred methods. 'Blended learning' mainly refers to a process in which a mixture of ICT and Internet methods are used, combined with face-to-face classroom models, as a way to develop pedagogical approaches, enhance student skills and knowledge, and improve educational outcomes (Bersin, 2004).

Both synchronous and asynchronous techniques can be used effectively in electronically supported courses in e-learning environments. Synchronous e-learning is a live learning process,

requiring learners to be in front of their computer during the process (Welsh *et al.*, 2003). Asynchronous e-learning, meanwhile, is commonly facilitated via electronic tools such as e-mail and forum discussions: it supports working relations among learners and teachers from different places and times. Coursework is delivered via web, email and message boards, and posted on online forums, making it a key component of flexible e-learning (Woollard, 2011; Rosenburg, 2001; Rosen, 2009; Spinks, 2007). Woollard (2011) highlights three main components of learning: action of learning (teaching, training, and tutoring), means (technology-based resources) and capabilities (developing learner's abilities).

In Saudi Arabia, a developing country, there is an emerging need to integrate ICT and web-based methods into the educational curricula (Khelifa, 2002; Abozaid 2010; Alebaikan and Troudi, 2010; AlabdelKereem, 2009). Failure to do so is to risk the country's students falling behind their counterparts in the developed and developing world, who already have access to new, interactive teaching methods. Understanding the current situation of e-learning in Saudi universities and schools is vital in establishing these environments. This understanding of the current situation justifies particular research which explores, investigates and analyses the influence of e-learning methods on the current traditional curriculum in terms of improving or expanding current knowledge and increasing communication, interaction and collaboration.

This research sets out a case study aimed at addressing the using of an online forum as an asynchronous tool in learning at a secondary School in Boraydah, Alqassim, Saudi Arabia. It is designed to investigate students' perspectives of their experience inside and outside classroom related to communication, interaction and collaboration, before and after using the online forum, through an asynchronous e-learning environment. Consequently, the research explores elements of communication, interaction, collaboration, and the community of practice between students. The research findings will assist in building a clearer understanding of the impact of integrating and using asynchronous e-learning tools in educational curricula in Saudi secondary schools. The study highlights the utilisation and usefulness of e-learning methods in educational outcomes and in increasing knowledge and understanding.

1.2 Statement of the problem

The researcher's first-hand experience as a secondary school Geography teacher, as well as an education supervisor of over 40 schools in the Alqassim area for nine years, has given her the opportunity to be in direct contact with students, observe shortcomings in teaching methods, and identify a number of important constraints in learning methods. In particular, pupils have never been encouraged to communicate with their classmates during or after school to enhance their understanding of learning tasks or expand their existing knowledge. Instead, they have been forced to rely completely on traditional teacher-centred methods of learning, such as lectures listened to in silence or by memorising textbooks.

Regarding the poor of communication and interaction, the limits of time and space in schools make the expansion of learning experiences beyond school walls of a great value to students' learning (Schunk, 2012). As students do not communicate and interact at school, which is expected to reflect negatively on their communication and interaction after school, responding to this issue by developing a tool to be used after the school becomes easier and more useful than changing or challenging the bureaucratic and centralised system run by the Ministry of Education in Saudi Arabia. In addition, the availability of various types of technologies among students should make us think of its proper utilisation to further improve educational practices (Cennamo, Ross, and Etmer, 2010). Furthermore, it is emphasised in the literature that the transfer of learning experiences and impact outside the classroom can play a major role in knowledge retention and making sense of what students learn (Schunk, 2012).

Communication and interaction between pupils can facilitate understanding and learning. On the other hand, the lack of communication and interaction can deprive pupils from valuable opportunities to learn from and through other classmates. In such contexts, students become active learners which help them to examine and analyse information through active engagement. Learning is no longer a 'spectator activity' where students sit in long lecture hours listening to teachers and memorising text book literature. Students need to be engaged in learning; this can be achieved through transforming knowledge gained into an important part of their lives. Schools and teachers are in a position to create platforms where students can talk, share, write and apply what they have learned in class (Chickering and Gamson, 1986 cited in Andrawis 2011). Andrawis

(2007) argues that students rarely understand and retain information relayed in classes. This undesirable aspect of learning can be counteracted through students actively participating in classes, demonstrations, role plays and group discussions. Active learning can be more effective than the traditional teacher-centred style of learning which relies on the passive role of students (Knapper, 2007).

Research has pointed to lack of systematic integration of ICT and web-based teaching methods into the Saudi secondary schools system (Asiri *et al.*, 2012; Alebaikan and Troudi, 2010; AlabdelKereem, 2009; Alfantookh and Alsultan, 2010). Alsahli (2012) indicated that there is a gap between knowledge of ICT and its utilisation in teaching and learning in the Saudi context. For instance, ICT teacher professional development programmes focus mainly on basic skills, such as Microsoft Word™, PowerPoint™ and Excel™ (Ministry of Education in Saudi Arabia, 2011, Alsahli, 2012) instead of the pedagogical use ICT (Watson, 2001; Mikre, 2011) and the Internet is not utilised properly by learning policies and strategies (Alebaikan and Troudi, 2010; AlabdelKereem, 2009; Alfantookh and Alsultan, 2010). Thus, students neither use nor benefit from ICT in their learning; neither do they attempt to access web networks to interact with other students.

As a result, the curriculum is still based on traditional teacher-centred methods, stressing the transfer of knowledge to students through teachers and textbooks. Clearly, this context can be demotivating for students and does not allow for discussion or lively critical engagement. Furthermore, the lack of access to ICT can impact students, especially in term of communication, interaction, and collaboration in and out of school. Thus, there is an urgent need to increase communication, interaction and collaboration between students. Students who have Internet access at home are greatly advantaged; on the other hand, students who have difficulties accessing the Internet are unlikely to succeed with more modern, ICT-based teaching techniques employed in Saudi educational contexts.

Accepting the constructivist-based pedagogies, encouraging students to share experiences and understandings, is important, as such acceptance encourages learning, especially when students correct each other and teach one another new aspects. This research considers that students would significantly benefit from a virtual environment and the use of electronic tools to assist

them in communicating and interacting with each other and thereby foster their understanding and interpretation of scientific concepts by utilising a specifically online forum.

The aim of this study is to bring a better understanding of the use of the online forum and identify the learner-based issues associated with communication, interaction, and collaboration. In addition, the study aims to investigate how designing e-learning could positively impact students by moving from a traditional teacher-centred pedagogy based on teacher-centred learning to one where the focus, or the control of learning, is that of the computer (forum and activities); as well as from a system based on individual learning to one based on collaborative learning (social constructivism).

1.3 Rationale for this study

Asynchronous e-learning allows learners to access e-learning environments at any time, download materials, and send messages and comments to teachers or peers (Hrastinski, 2008). E-learning tools increase students' ability to construct knowledge and be creative in receiving, addressing and understanding information (Selim, 2007). Moreover, e-learning facilitates the learner's ability to become an active and effective director of their own learning and methods (Zhang *et al.*, 2004). The benefits of using e-learning in education, and reducing the use of traditional teacher-centred methods, relates to both teaching and learning approaches (Hrastinski, 2008). As a teacher and educational supervisor for many years, the researcher noted that students' lack of understanding of key concepts limited their ability to learn using traditional teacher-centred methods with an apparent poor level of communication and interaction.

This study explores a strategy used by a Saudi secondary school to expand educational options, including addressing the problem of meeting new requirements. Specifically, it focuses on how an asynchronous e-learning environment could modify the way in which Saudi secondary schools offer education to students. The use of asynchronous learning as part of e-learning is important in the teaching process (Alebaikan, 2010). Given this importance, and the scarcity of studies on the effectiveness of e-learning (in teaching in general and in the Geography curriculum in particular), the study investigates the impact of an educational asynchronous learning method (online forum)

for Geography in the third grade of secondary school. The researcher is investigating the impact of this method on student communication, interaction and collaboration, from students' perspectives. To the knowledge of the researcher, the online forum in this study is new to teaching and learning geography in Saudi Arabia.

Moreover, the study illustrates the viability of the online forum as an asynchronous e-learning method for enhancing learning skills and individual knowledge. It provides a clear explanation and analysis of the elements of the e-learning process; particularly, student discourse, interaction, motivation and knowledge construction. Full attention is paid to the challenges of e-learning, such as barriers which obstruct student communication, interaction, collaboration and the lack of a physical presence and a sense of involvement in a group. Issues related to community of practice are also explored.

1.4 Aim and objectives of the study and research questions

The aim of this study to bring a better understanding of the affordances of the use of a forum and identify the learner-based issues associated with its use.

Based on the identified research problem, the researcher has framed the following research objectives:

- To investigate the perceptions of the students with regard to current classroom sessions and pedagogy.
- Analyse the methods and strategies by which the online forum can be integrated with the current traditional teacher-centred curriculum.
- Assess the benefits and challenges of implementing an online forum, taking into account the contemporary pedagogy and the experience of students.
- Examine detail and study different ways in which the online forum is integrated into the curriculum and pedagogy through the lens of (Communities of Practice).

Further, based on the above stated research problem and objectives, this study seeks to answer the following research questions:

What are students' perceptions of their current classroom experiences?

- Generally
- In relation to interaction and communication
- In relation to knowledge

What are students' perceptions of the online forum intervention?

- Generally
- In relation to interaction and communication
- In relation to knowledge

How do students react in the online forum?

- How much is the forum used?
- What is the forum used for?
- How does the forum develop features associated with Communities of Practice?

1.5 Significance of the study

This study contributes to the existing, limited research on the influence of emerging asynchronous e-learning on curricula, pedagogy, and the education system in Saudi secondary schools. It aims to gain a deeper understanding, from the students' perspective, of the effectiveness of the Internet online forum as a relatively new, asynchronous e-learning tool. The study considers students' communication, interaction, and collaboration skills by collecting information and analysing ideas while being free of fixed learning times and places to construct knowledge on their own. Moreover, the study describes and explores a variety of issues concerning asynchronous discourse and student communication, particularly Community of Practice.

The findings will provide a concrete foundation of knowledge about aspects of the e-learning environment, such as how establishing an asynchronous e-learning process at secondary school level could affect current Saudi educational policy, which remains fundamentally dependent on traditional teacher-centred approaches. It is hoped that the findings will be adopted by the Ministry of Education in Saudi Arabia, in order to introduce to the use of asynchronous e-learning in Saudi schools, and assist in changing teachers' attitudes towards using technology with their students.

1.6 Thesis structure

Chapter 1: Introduction

This chapter introduces the research idea and problem statement. It describes the rationale and significance of the study; its aim, objectives, and research question. The aim of this chapter is to provide a fundamental directive to the overall thesis by identifying the course of thesis.

Chapter 2: Saudi context

This chapter begins with outlining Saudi's basic demographics and socio-economic status. The chapter then presents an overview of Saudi's educational system and, more specifically, the use of ICT in schools and its influences on Saudi education system. The chapter discusses the influence of cultural perspectives on using computer and new technology with female students in Saudi Arabia.

Chapter 3: Literature review

This chapter presents a critical discussion of the literature that relates to the research problem. It discusses issues related to e-learning, including: learning theories and pedagogy; Knowledge Building Theory; communities of practice; ICT in education; ICT in developing and developed countries; e-learning; Forums; 21st century learners; and e-learning in Saudi Arabia.

Chapter 4: Research methodology

This chapter discusses the methodological approach used to respond to the research problem. It describes the research paradigm, the qualitative research method, the case study strategy and the specific ethical considerations; and outlines the issues of data collection and analysis.

Chapter 5: Findings

This chapter discusses the study's findings and presents a detailed description of the analytical results.

Chapter 6: Discussion

This chapter discusses the study's findings linked to existing literature and presents a detailed description of the analytical results.

Chapter 7: Conclusion

This chapter presents a summary of the conclusions drawn from the data, an interpretation of the findings, the limitations of the study, the implications of the findings, and recommendations for future research.

Chapter 2: Saudi context

2.1 Introduction

The aim of this chapter is place this study in a broader context. This study takes place in the Saudi Arabia, as a country that bases its political system on Islamic Sharia laws (Hamdan, 2005). Saudi Arabia was established in 1932 after the union battles led by King Abdulaziz ibn Abdul Rahman Al Saud. However, the country emerged as a state country led by seven kings (the offspring of King Abdulaziz) who have continued to be in power ever since. King Abdulaziz died in 1953; however, his legacy lived on embodied in his immediate descendants who have ruled Saudi Arabia up until the present day. This has had an impact upon the interpersonal (mores); intra-personal (beliefs) and social (ethical) aspects of this study (Ministry of Education, 2016).

This chapter commences by outlining Saudi's basic demographics and socio-economic status. The chapter then presents an overview of Saudi's educational system and, more specifically, the use of ICT in schools and its influences on Saudi education system. The chapter discusses the influence of cultural perspectives on using computer and new technology with female students in Saudi Arabia.

2.2 Saudi Arabia

Saudi Arabia is a large Arabic country located at the furthestmost part of south western Asia (see figure 2.1) with the Arabian Gulf, United Arab Emirates and Qatar to the east; the Red Sea to the west; Kuwait, Iraq and Jordan to the north; and Yemen and Oman to the south. Saudi Arabia is located at the heart of the Arab Peninsula with an area of 2,000,000 square kilometres (868,730 square miles) (General Authority for Statistics, 2015; Ministry of Culture and Information, 2006).

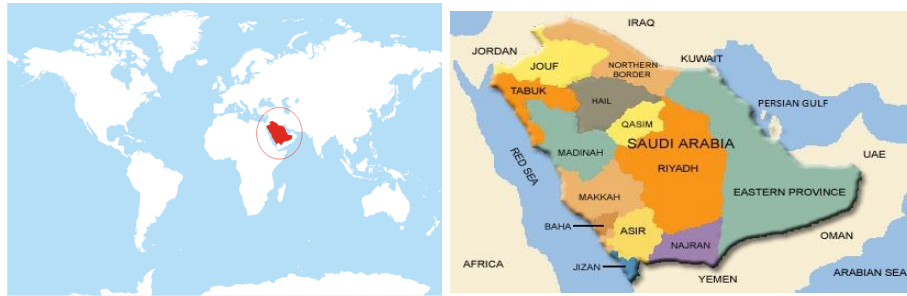


Figure 2.1 location of Saudi Arabia in the world (worldmaps.2015)

2.2.1 Basic demographics

Saudi Arabia has a diverse topography, with 1100 kilometres of coastline on the Red Sea and 640 kilometres of coast on the Gulf. In addition, there is the Empty Quarter in the south-eastern part of the country, occupying an estimated area of 640,000 square kilometres, composed of sand hills and lava fields (The Ministry of Culture and Information, 2006).

Saudi Arabia is divided into 13 regions governed by a member of the royal family called 'prince of the region'. However, these regions are divided into various numbers of governorates differentiating in number from one region to another. Each governorate is divided into centres linked administratively to the governorate itself or the emirate. The emirate, governorate or centres include a number of population settlements to which the latter are linked administratively. Princes are appointed by the king and supervised by the Minister of Interior (The Ministry of Interior, 2014; General Authority for Statistics, 2015).

According to the General Authority for Statistics (2015), the population of Saudi Arabia is 30,770,375 (20, 702,536 are Saudi nationals) (50.9% male, 49.1% female). The Saudi population growth rate in 2013 was 2.15% with an unemployment rate of 11.7% in 2014. The sex ratio at the time of birth is 1.05 males per a female; within the total population the mean ratio is 1.37 males per a female.

2.2.2 Religion and culture

Islam (the second largest religion in the world) is the main and only religion recognised by state in Saudi Arabia (Hamdan, 2005) where majority of Saudi Arabia's population is Sunni Muslim following the Hanbali School of Sharia (Al-Hakami and McLaughlin, 2016). Saudi Arabia is host to the two holy cities Mecca (where Prophet Mohammad was born and Muslims go for pilgrimage) and Medina (where Prophet Mohammad lived most of his life as a prophet and is buried). Sharia Law is considered the main and only law in the country and is derived from the Holy Book for Muslims (The Quran). The country was united in 1932 on the basis of Islam and Sharia Law has been applied firmly since then.

Cultural perspectives in the country are also derived from Islam with all aspects of social and cultural perspectives revolving on the Muslim religion and Muslim religious identity. The cultural environment in Saudi Arabia is highly conservative; the country adheres to a strict interpretation of Islamic religious law. Muslims believe that Islam covers all aspects of life and is a permanent solution for all difficulties and problems; as such, Islam is firmly applied in the country. It should be noted that there are some local traditions in different regions in the country but these traditions fall in line with Islam. Understanding the role of religion and local cultural perspectives are critical in understanding women's and girls' position in education and in society in general (Hamdan, 2005). In addition, social perspectives of people play a major role in the community. In an apparent example, gender segregation between male and female students in schools is firmly applied in the country by the government as a response to national cultural perspectives; by the same token, it is not banned abroad between Saudi male and female students who freely study in co-educational settings around the world.

2.2.3 Socioeconomics of Saudi Arabia

Saudi Arabia is a strong oil based economy, this impact is predominantly visible in all variable of the country. Another key factor in the country is tourism revenues. These two factors distribute the socio economic environment of the country (Wehrey, 2015). The country has been divided into different tribes which exercise variable control based on ownership of oil reserves. Similarly, there is an increasing number of working class growing in Saudi society which is thankful to the

saudisation program launched by the government which is focussing on increasing Saudi nationals in the organisation working in Saudi Arabia (Al-Zaidi, 2015). This increasing population in Saudi Arabia is not only educated but they are evolving to be more practical citizens of the country moving away from the traditional tribal system and moving towards a more homogenous society (Goffman, 2015).

The contribution of increased rate of population growth and a significant amount of foreigners in the country is challenging the existing family based ruling system of the country. The strict regulations and gender issues have been reported more frequently in Saudi Arabia in last decade than ever. Another positive area is growing a number of interests in scientific and intellectual approach by a section of the middle class that is demanding for introduction for formal reforms in the country and equal distribution of rights (Wehrey, 2015). The rising concern of disparity between the rich and middle class and poor is also a point of concern for the society. The government has also felt the need for this has made a significant investment in the social development by establishing universities and funding programs for the unprivileged (Al-Zaidi, 2015).

2.3 Education System in Saudi Arabia

This section deals with the nature of the educational system in Saudi Arabia and other pertinent details by offering a brief account of its history and general foundations followed by some relevant details, such as the day and the school year, as well as curricula and the number of teaching sessions and how they are allocated, with the main focus being the secondary school level. Then, this section will go on to discuss the difficulties and obstacles facing the educational system in Saudi Arabia in an era characterised by cutting-edge technology and the use of high-tech computerised systems. This particular section in the chapter can be considered as an introductory discussion of the research problem in the Saudi context, where the emphasis is on geography in the third year of the secondary school stage, which will increase the potential for communication, interaction, and cooperation between the students in the subject of geography (AlGhamdi and Abdul-Jawad, 2015).

The education system in Saudi Arabia is highly centralised, controlled by the Ministry of Education. Education lies at the heart of the overall governmental policy in the country. The centralised educational system in Saudi Arabia depends on the Ministry of Education in Saudi Arabia in terms of the planning and implementation of the education process and other related aspects. Centralisation also applies to higher education, which is catered for by the Ministry of Higher Education. It should be noted that at the start of 2015, the Ministry of Education and the Ministry of Higher Education were merged into one ministry, with both institutions maintaining their own tasks. Centralising the education system and emphasising the role of the Ministry of Education meant that there would be a narrow margin of freedom for school management and teachers in terms of effective planning and implementation of the educational process (AlGhamdi and Abdul-Jawad, 2015).

The educational system in Saudi Arabia is considered as one of the key features in the country's broad national policies. Indeed, educational policies in Saudi Arabia emanate from Islam, which, as stated above, represents the principal legislative and moral authority in the country (Ministry of Education, 2004). From this perspective, the education system in Saudi Arabia is totally guided by Islamic values. According to the Ministry of Education (2016), the main aim of education is to understand Islam in the right way. Indeed, the objectives of education are to ensure that students adhere to Islamic codes and abide by their faith for them to be good citizens. They also need to be brought up on Islamic values and morals; create a complete and balanced character; and aim for a superior scientific achievement; in addition to acquiring continuous learning skills and developing positive attitudes towards the development of their community, country and their service.

2.3.1 History of education in Saudi Arabia

Formal education was finally established in Saudi Arabia in 1926 following the emergence of the modern Saudi state with a number of directorates that initially were under the auspices of the Ministry of the Interior. The development of education included the formation of a directorate, a council and then a ministry with a presidency developing girls' education.

2.3.1.1 Directorate of Education

The General Directorate of Education was founded in Mecca in March 1926 in order to oversee educational policies in Saudi Arabia, except for military education. Administratively, it used to follow the Ministry of the Interior; then, it was the responsibility of the Deputy General in Mecca. During the early years, the Directorate of Education was focused on structuring educational policies. Financially, it started out with a limited budget, with an initial capital of 66, 650 Saudi Riyals (11,600 British pounds) and a total number of 12 schools, including 700 students in formal education, but was dedicated to male students only (Alhamed, 2008).

2.3.1.2 Education Council

In July 1927, a Royal Decree was issued by the Council of Education seeking to unify the education system in the Hijaz (the western region of Saudi Arabia) and to make primary education compulsory and free. The education system comprises four phases: preparatory, primary, intermediate, and higher education. The main goal of its inception was to oversee the implementation of all educational policies and provide a clear and systematic categorisation of the various stages of education, as well as developing an educational system in the Hijaz and striving to make primary education compulsory and free. The Directorate of Education was regarded as the highest educational authority in Saudi Arabia at the time and started to represent the executive branch of the education policy in terms of setting and implementing curricula, for which the Council of Education was responsible. As such, the country witnessed for the first time an education system in the modern sense; a system aiming to unify the education for all citizens, even though it was only confined to the male category (Alhamed, 2008).

The number of schools opened during that period (1927-1951) reached 312 public primary schools, 14 private primary schools, 11 state intermediate schools, four private intermediate schools, one vocational school, and eight institutes to prepare teachers, one teacher college, one Sharia School, six English Language schools, and one evening school to teach typewriting (AlGhamdi and Abdul-Jawad, 2015).

2.3.1.3 The Ministry of Education

The Ministry of Education in Saudi Arabia was established in 1951 in order to provide schooling services for boys in the newly established country where Prince Fahad (the fifth king) was its first minister. The new ministry was an extension and development of the Directorate of Education, and has been assigned to the planning and supervision of public education for boys in three stages (primary, intermediate, and secondary school) (Alhamed, 2008; Ministry of Education, 2016).

Every subject in education throughout the Saudi Arabia reflects the governmental general policy including, philosophy, plans, curriculum, syllabus, and textbooks. The Ministry of Education is responsible for providing buildings, curricula, textbooks, teachers and all other administrative issues, including furniture, infrastructure and maintenance. Data from the Ministry of Education in Saudi Arabia shows the Ministry of Education's own budget in 2012-2013 was 94,656,037 SR (1SR= 0.17BP), which is the equivalent of 26% of the budget. The following (Figure 2.2) shows the number of schools, classes, students, and teachers in all different levels of education under the supervision of the Ministry of Education for the academic year 2013/2014 (Ministry of Education, 2014).

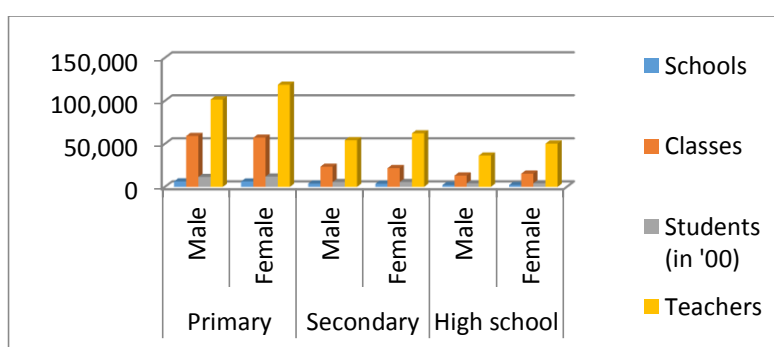


Figure 2.2 Distribution of students in public schools in Saudi Arabia

2.3.1.4 Girls' Education

Girl's education in Saudi Arabia was always segregated from boys and that is experienced in all of classrooms in Saudi Arabia. It is segregated with boys and girls being taught separately and differently, pupils having little or no social interaction in the classroom, timetabling so that pupils

have little social interaction in school, resources for education being dated textbooks, pedagogy being didactic and teacher focussed (Alseweed, 2013).

The process of including females in education separately began as soon as Saudi Arabia was founded, but it was limited to Koranic schools in the cities of Hijaz, Najd, and the eastern and southern regions. In addition, more than 17 private schools were opened, but were limited to a certain social class. The Saudi government continued to promote and encourage private education, which saw the number of private schools rise to an unprecedented 53 or more before the establishment of the General Presidency for Girls Education, with the exception of the Koranic schools (Alseweed, 2013).

2.3.1.5 General Presidency for Girls' Education

In October 1959, a presidency was established to cater for the educational needs of girls. This decision contributed to the confirmation and consolidation of girls' right to education in keeping with their abilities, as well as their duties and commitments to their society. This decree has had a great resonance in the country and constituted a turning point, paving the way to the rapid development and unprecedented growth of the education girls (AlGhamdi and Abdul-Jawad, 2015).

In the July 1960, the presidency opened its doors as an organisational authority drawing up plans and formulating frameworks for an effective educational policy for girls in Saudi Arabia. The state budget allocated for the education of girls in 1959-1960 amounted to 2,000,000 SR (around 335, 965 British pounds) (Al-Thaqafi, 2012).

In April 2003, the General Presidency for Girls' Education was merged with the Ministry of Education in Saudi Arabia. As such, the education of boys and girls was brought together under one single ministry; namely the Ministry of Knowledge, which was also changed into the Ministry of Education. Unlike previously when boys' curricula had significantly differed from the girls', it was possible to unify these curricula after the merging of the two educational authorities. However, until now, segregation in education between male and female remained in force throughout the various stages of education (AlGhamdi and Abdul-Jawad, 2015).

After the death of King Abdullah bin Abdul Aziz and the arrival of King Salman to power, the latter announced the integration of the Ministry of Education with the Ministry of Higher Education and the appointment of one minister only, rather than having two ministers, to oversee both ministries, which came into effect in January 2015.

2.3.1.6 Private education

Students in Saudi Arabia not only have access to public education, but also to private education for those who want or can afford to in return for a given fee set by the institution. Usually, private schools offer additional subjects or programmes for students. According to the Ministry of Education (2008), private education schools, which fall under the responsibility of the Ministry of Education in Saudi Arabia, account for 9% of all schools.

It should be noted that private education has been taken into account in the Saudi education policy; thus, the state seeks to achieve the following objectives:

- Ensuring an appropriate level of education, with safety and hygiene arrangements similar to those provided by state schools.
- Ensuring the appropriateness of the overall direction of the school in accordance with the requirements of Islam.
- The estimation of the appropriate financial assistance for each school to achieve justice and equilibrium between the various private schools.
- Helping schools and community to achieve the educational objectives in terms of supervision and technical support (Oyaid, 2009).

2.3.2 Nature of education

Like other countries in the region, schools are divided into four levels: pre-school, primary, intermediate and secondary school. Pre-school is free in public schools and is also optional covering those between five and seven years old. The primary stage is compulsory and free in public schools for six years (sixth grade), while the intermediate lasts for three years and is also compulsory. The academic year is divided into two terms, lasting 18 weeks each. The first 16 weeks are for teaching and learning activities, with the last two kept mainly for the final

examinations. The high stage covers those between the age of 15 and 18 (the Ministry of Education, 2015). As the current study concentrates on secondary schools (13th grade), the following details cover the secondary school level stage.

2.3.3 Secondary school level, curricula and classroom distribution

According to the Ministry of Education in Saudi Arabia, the high stage is to prepare students to enter higher education institutions (the Ministry of Education, 2014). This stage covers grades between first secondary to third secondary (10th to 13th grades) and ends with sitting for the General Secondary Certificate Examination. This stage is divided into two major streams; namely, the scientific stream and the literary stream, which are available to study for both males and females. Students have to pass their final examinations which are prepared by their teacher under direct supervision of head teachers in order to receive the Secondary School Certificate (the Ministry of Education, 2015). As with other countries in the region, students who have high marks can choose their subjects to study in public universities and colleges.

According to the Ministry of Education (2015), the secondary school consists of three years:

Year One: Female students are provided with 20 subjects (38 hours per week) for all subjects, whether literary or scientific, including religious subjects (the Quran, Unity of God, Fiqh, Hadith); Arabic modules (Grammar, Rhetoric, Literature, Reading, Writing); social studies (History and Geography); scientific subjects (Mathematics, Physics, Chemistry, Biology); and languages (English); in addition to Computer Studies and Office, Sport, and other practical activities, with Art or Housekeeping as the two activities that students have to choose from.

Year Two: Once the student passes the first year; she can choose to join either the Literary Section or the Scientific Section.

- The Literary section: The student has to study 17 curricula over 34 hours a week. The curricula includes religious modules (The Quran, Unity of God, Fiqh, Hadith); Arabic modules (Grammar, Rhetoric, Literature, Reading, Writing); social studies (History and Geography); languages (English) and Psychology; in addition to Computer Studies and Office, practical activities, including Art and Housekeeping.

- The Scientific section: The student has to study 15 curricula over 36 hours a week, which includes religious modules (The Quran, Unity of God, Fiqh, and Hadith); Arabic modules (Grammar and Conjugation, Literature, and Writing); scientific studies (Mathematics, Physics, Chemistry, and Biology); and languages (English), in addition to Computer Studies, with students choosing either Art or Housekeeping as a practical activity.

Year Three: After passing *Year Two*, the student can proceed to *Year Three* with the same modules studied in *Year Two*.

- The Literary Department: The student has a total of 16 curricula to study over 32 hours a week, including religious modules (The Quran, Unity of God, Fiqh, Hadith); Arabic modules (Grammar, Rhetoric, Literature, Reading, Writing); social studies (History and Geography); languages (English) and Sociology, in addition to Computer Studies, Office.
- The Scientific Department: The student has to study 13 curricula over 33 hours a week, including religious modules (The Quran, Unity of God, Fiqh, and Hadith); Arabic modules (Grammar and Conjugation, Literature, and Writing); scientific studies (Mathematics, Physics, Chemistry, and Biology); and languages (English), in addition to Computer Studies.

2.3.4 School day

The school day begins at 7am and finishes at 12.30 pm (in summer time); and starts at 7.30 am and ends at 1.00 pm (in the winter). Each lesson lasts for 45 minutes followed by a five minute break between lessons. Students are given half an hour for breakfast at from 9.30 to 10.00am. With the exception of a number of private schools, the majority of schools do not offer a catering facility (Ministry of Education, 2016).

2.3.5 The Textbook

The Ministry of Education in Saudi Arabia provides students with textbooks free of charge at the beginning of each school year, with one textbook for each subject. Every year, these textbooks are printed in the Ministry of Education in Saudi Arabia which also changes the cover to update the year of printing. The textbooks are distributed to all schools in Saudi Arabia, which indicates that the teaching of the contents of these textbooks is comprehensive and binding for all Saudi schools

without exception. The only schools exempt from such procedures are foreign schools as they have their own special curricula, in addition to the teaching of compulsory subjects like religion and Arabic, which are part and parcel of the Ministry of Education's curricula in Saudi Arabia (AlMohareb, 2013).

According to AlMohareb (2013), there is a real gap existing between the actual curriculum and the students, and the reason for this is that the curriculum is developed at various levels of education and put in place by unspecialised practitioners. In fact, they do not meet the students' aspirations or their cultural desires. In addition, they seem to be contextually and practically irrelevant, especially with the lack of guidance in the early stages, such as the subject of research methodology.

2.3.6 The educational supervision

For each teacher, there is a specialist supervisor who is required to conduct a classroom visit once or twice during the course of the academic term. Typically, the role of the supervisor is to develop a curriculum-based educational plan that the supervisor also needs to follow and ensure its implementation, as well as monitoring the performance of the teacher in terms of lesson preparation and adherence to the regulations and circulars regarding school decisions. The teacher must abide by the time allocated for each lesson and has to go through the curriculum on time, and is not allowed to delete or add any lessons. The educational supervisor, who is appointed by the Ministry of Education in Saudi Arabia, evaluates the teacher at the end of the year and is given 10 marks from a total of 100. The school administration carries out the evaluation of teachers who are given marks out of the remaining 90 (AlMohareb, 2013).

Some studies have also highlighted the lack of effectiveness in the supervisory system, with a number of studies and experienced educationalists showing that the traditional educational supervision, which is focused on spaced out visits, is not efficient in terms of enhancing teachers' performance and the overall school performance (Al-Oufi, 2007; Al-Omar, 2008; AlMohareb, 2013), and that the most that such supervision could offer is the identification of mistakes or shortcomings in teachers' delivery of the lessons. Often, even when identified, there appears to be no time for a remedial action plan. The number of teachers a supervisor is given can reach as

many as 90 and it is not unusual to exceed 100 (Al-Omar, 2008; Al-Oufi, 2007); similarly, seldom does he/she fall below the 60 mark in terms of the number of teachers he/she has to supervise. As for the number of schools visited by the supervisor, they are usually around forty. In such situation, it becomes impossible for a supervisor to concentrate on his/her job or carry out a task of a developmental nature. In most cases a supervisor is expected at best to pay a classroom visit to guide teachers or provide an improvised evaluation. Thinking of supervision as a developmental process and a deep and far-reaching approach is almost non-existent, which has contributed to the state of frustration among teachers and principals, as identified in some studies and reports (Al-Mouhareb, 2013).

2.3.7 Curriculum Development

In October 2004, the Ministry of Education in Saudi Arabia sought to develop the curriculum by deleting lessons that appeared to be calling for extremism and by undertaking to modernise the subjects of science and mathematics. In 2007, the Ministry of Education started the process of distributing CDs that contained all the curricula, as well as launching an e-learning portal in order to shift to the digital community and integrate technology in education to give students the opportunity to gain hands-on experience in IT applications. The CDs also showed how to deal with applications, which would allow them to keep abreast with the development of educational projects in Saudi Arabia. In addition, since 2012, the ministry has been actively engaged in providing textbooks in the form of electronic applications via smart devices. Worth mentioning is that more than one and a half million users have benefited from the curricular applications on smart devices in the various stages of education. Another noteworthy step was the launch of the Saudi curriculum in the Apple Store in January 2015 (AlGhamdi *et al.*, 2015).

According to Al-Shammeri, 2012, Saudi Arabia was not faced with any external pressure when developing its educational curricula; instead, it was more of a self-driven where decision-makers were driven by the need to conduct a self-critiquing approach. Thus, the Ministry of Education in Saudi Arabia has been largely successful in bringing some qualitative change in the curriculum in accordance with international curricula standards; however, there has been no real improvement in students' performance (Al-Mulham, 2014). Al-AbdelKareem, (2009) stated that the Ministry of Education in Saudi Arabia is focused on the method (methods of teaching and learning); however,

this is done through a traditional perspective that sees the curriculum as what lies between the covers of the textbook in the sense of contents-only approach. As far as we are concerned, we see the curriculum from a broader angle in terms of several components complementing each other, including the textbook, course objectives, documents, teacher, supervisor, and school environment, as well as the various activities and evaluation processes. All these elements, including the student, should be developed simultaneously as one cannot place a huge budget for the development of curricula without taking teachers and students into account.

Al-Mulham, (2014) explained that the steps taken in relation to the curriculum were exceptional and advanced, but the curriculum should not be looked at literally or as a tool. He argued changes should keep pace with the drastic changes in the education systems in place, while standards should be set by the ministry. In addition, writing curriculums and books should be done a specialised institution rather than educational supervisors and teachers. If the Ministry of Education in Saudi Arabia insists on teachers to write curriculum, those teachers should be professionals and have teaching credentials to be trusted. For this purpose, it is critical to ensure that teachers have continuous professional development and gain the appropriate qualifications in order to be eligible to teach this curriculum.

2.4 Difficulties of educational system in Saudi Arabia

Al-AbdelKareem (2009) indicates that the education in Saudi Arabia is facing several difficulties, particularly following:

- Lack of a specific vision for education

There is no such strategy based on a clear conceptual framework except for the overall guidelines and public policies, as specified in the 'Education Policy'. It seems that there is no clear vision agreed upon by the education decision-makers and guiding the promotion of educational projects. Therefore, it is difficult to identify a specific route for the development and advancement of education. In fact, several projects and development trends are either reactions to certain events or the product of personal endeavours by some of the ministry's officials.

Because of these personal endeavours and lack clear vision, the projects were found lacking in two major aspects; first, they are offered without a clear underpinning conceptual framework linking them to other projects; second, this project may fail and gradually decline, or even miss the intended targets, without being able to evaluate the results of their application or ensuring their development (Al-Shammeri, 2012).

In spite of the introduction of advanced Secondary Developed School System project and, there was no real evaluation of the implementation (Al-AbdelKareem, 2009). Later, 'Pioneers Schools System Project' was introduced, followed by Flexible Secondary Education or the Coursework System which was applied in 2004 (Al-AbdelKareem). As in previous projects, there was no evaluation of these projects depending on empirical studies.

At the primary education level, the key stage system was suggested (Year 1, Year 2, and Year 3), but was not developed or even tested or evaluated of its improvements, although there were some indicators of its effectiveness (Alrwais *et al.*, 2011). To evaluate their students, teachers extremely depended on exams as the key source of evaluation (AlRwaithi and AlRoasaa, 2012). The Continuous Evaluation System was introduced at the primary stage (high level of primary school) in the academic year 2006/2007, but did not show any benefits from the tests and evaluation provided in the primary stage (AlabdelKereem, 2009). Several of the observations of supervisors and observers indicate a clear lack of teachers' skills in the formulation of test questions. Eventually, this system was stopped by the Ministry of Education in Saudi Arabia and using exams to evaluate students was reemployed (Ministry of Education, 2015).

This type of evaluation does not yield any benefits unless three basic conditions are taken into account: the first relates to the fact that the curricula should be prepared in keeping with this type of assessment, and that such curricula should be delivered using the appropriate teaching methods; second, teachers should be trained on continuous assessment skills; and third, the number of students' needs to be appropriately spread out over the time available for teachers in their classroom teaching and assessment (Smaili, 2012).

Without these three conditions, it is likely that assessment would continue to follow the traditional continuous assessment programme. In addition, integrating people with special needs in mainstream education was also proposed in 1990 (Ministry of Education, 2008); however, in recent years, this trend has not fully materialised.

- Declining teachers' qualifications

In spite of adopting the bachelor's degree in education as a minimum requirement to qualify for a teaching job, in a majority of cases, a bachelor's degree in another discipline other than Education, such as English, mathematics and physics, can be resorted to as a result of the scarcity of teachers in these subject matters. However, there is no actual criterion to follow when selecting from bachelor's degree holders, which in practice is determined by the principle of supply and demand. Although the Ministry of Education in Saudi Arabia established a system to test the efficacy of new teachers, the teachers' low level of performance and underachievement in this test have often forced the ministry to waive standards and employ teachers with low results in the test (Al-Tayash, 2009; Smaili, 2012).

There seems to be clear teachers' deficiencies scientifically and educationally, which was exposed when a skills test was introduced in the academic year 2003/2004 for new teachers, with only 27% of the test takers reaching the 40% of the mark required to pass the test successfully (AlRwaithi and AlRoasaa , 2012). As suggested in some studies, and according to many supervisors' reports, the low teacher performance levels are not confined to new teachers, but even older and experienced teachers have the same issues (Smaili, 2012). This poorness of skills reflected in the teachers' focus on the use of traditional teacher-centred methods and lack of interest or knowledge about creative approaches in teaching (Bader, 2006; Al-Mutairi, 2005). This reflected on the teachers' performance and knowledge where only 5% of teachers benefited from short training programmes (3 to 10 days) held by the Ministry of Education according to the Annual Report of Education (General Directorate for Educational Supervision, 2006).

- School physical building

As a result of the increasingly rapid growth in population and geographic expansion, as well as lack of pre-planning, in the last few decades, the Ministry of Education in Saudi Arabia had to rent

residential buildings to be used as school though there was a clear shortage in educational facilities, including sporting halls and grounds, as well as poor and inadequate classrooms for educational activities (Al-Tayash, 2009). This lack of facilities has had a negative effect on a number not only on educational activities, but also on student and school performance, as well as teachers' development programmes where 50% of public schools are rented (Al-Moqrin and Al-Moqrin, 2009).

Although the schemes of public schools seem to be much better than those of rented schools, it more often to fail to contribute to creating an attractive educational environment within the school. The lack of large multi-purpose halls, as well as yards and playgrounds, along with inadequate air conditioning represents a pressing issue and an ongoing dilemma in most public schools' buildings, which reduces its educational effectiveness (AlShammeri, 2012).

- Oversized classrooms

The Ministry of Education's statistics (the Ministry of Education, 2008) indicated that the overall percentages for the number of students in classrooms and the ratio of students to teachers are low (with an average number of 25 students per classroom and a teacher for every ten students). However, numbers and statistics from other sources indicate that in some secondary schools in the cities suffer from the large number of students in their classrooms, relative to the small size of the classrooms with sometimes up to forty students (Al-Moqrin and Al-Moqrin, 2009). These issues make it difficult for teachers to use modern teaching methods (AlabdelKereem, 2009).

- School administrative system

The school administration is characterised by its bureaucratic routines, which is confined in the majority of cases to carrying out instructions with minimal efficiency (AlShammeri, 2012). The school principal, for example, has very limited or non-existent powers, with his/her role being often limited to facilitating the daily matters at the school. This situation has resulted in the principal being at risk of being held accountable for not adhering to the school's regulations, and thus returned back to his/her old job as a teacher (Alrwais *et al.*, 2011; AlShammeri, 2012). In addition, Principals also suffer from lack financial support or independency (AlOmar *et al.*, 2008).

Under this type of administration, a development approach prevails for projects and programmes always come from the Ministry of Education in Saudi Arabia. Thus, principals usually do not consider themselves obliged to carry out any developmental work unless it is issued by the Ministry of Education. Therefore, educational programmes and projects are generally state-run, based on the principle's personal view, which makes the programmes unresponsive to the needs of the students.

- Lack of a mechanisms to measure learning outcomes

There is no clear mechanism to determine how the educational system can achieve its objectives, both at the school or the community level. Similarly, there are no standardised or accredited tests through which the performance of schools can be evaluated, and there are no external benchmarking operations with other countries to identify the actual level of students in Saudi schools. There are even indications to the declining level of outstanding students compared to students of other countries (AlabdelKereem, 2009). As such, the assessment of school performance levels has been largely based on impressions or to test results which do not often reflect the actual level of student achievement.

- Lack of equipment and materials

Educational tools have not received adequate attention for several reasons, including the fact that they were either unavailable or in short supply by the Ministry of Education in Saudi Arabia (Smaili, 2012). In addition, teachers' training has been based on how to use these tools, not on how to prepare or design it. This is due to length of the teaching hours and the loaded curriculum, especially in the secondary stage (Al-Shammeri, 2012). Some teachers do not use some of the appropriate tools for their lesson because they do not believe in its role or use it only when they have time. Thus, learning tools remained for a long time dependent on the textbook, blackboard, and maps.

- The quality of the curriculums

When the formal education was commenced in Saudi Arabia in 1927 and where several obstacles facing formal education at its inception, as well as the lack of experience in the educational field,

the Directorate of Education had to recruit a large number of teachers from other nationalities and import a variety of curricula, making the national curriculum a mixture of the old curriculum and other curricula from other Arab countries that have been depended on in terms of textbooks (Al-Tayash, 2009). These imported curricula were influenced by the Western colonialism of those countries (AlMoussa and al-Mubarak 2005).

In addition, and as a result of a lack in learning tools and teacher educational preparation, the methods have relied on repetition and memorisation, rather than being dependent on research and application (AlShammeri, 2012). Furthermore, the curriculum has been so rich and aplenty, with no need to overwork the student who only needs the basics to allow him/her to achieve a deeper and more comprehensive self-learning.

The curriculum, especially in primary and intermediate stages, was mainly based on a theoretical and academic framework, which is based on repetition and memorisation rather than creativity and practical research and application in order to acquire the necessary behavioural skills and the appropriate cognitive elements, as well as gaining social and ethical values through practice and work instead of the traditional approaches to learning. This has alienated education from the social reality of students who for the most part of their lives have been focusing on traditional teacher-centred methods that are only useful to pass exams (Smaili, 2012).

Some of issues have emanated from reviewing curriculums, with the most important issue relating to exams as they seem to be a daunting prospect for students. As a result, these exams seem to receive more attention than the overall curriculum or the subject matter itself (AlabdelKereem, 2009). This is mainly the result of the general focus on the exams as the only gateway to success, which can affect the morale of failing students who may lose interest and consequently become truants or drop out altogether.

2.5 Internet in Saudi Arabia

Over the last few decades, the use of internet in Saudi Arabia has widely increased. Although, Saudi Arabia has been linked to the internet services for several years but the wide scale access to

World Wide Web was initiated in January 1999 (Alshehri, Drew and Alfarraj, 2012). There are different communication systems that have been currently operating in Saudi to connect different participants via internet. Among these, the Central Proxy Server System in the King-Abdul-Aziz City for Science and Technology (KACST) is the most popular system that provides a central access and implementation to all the internet services (Abanumy and Mayhew, 2005). Dial-up, DSL and Satellite are also available that give a technical support to the business users.

However, 44% of internet users prefer to use satellite system over other systems because it provides relatively low cost and unrestricted internet access (Al-Gahtani, Hubona and Wang, 2007). Internet service charges in Saudi Arabia are very expensive and each user has to spend approximately 100-300 Riyals (£20-60) every month on Internet services. Moreover, the Internet services also charge installation and monthly subscriptions to its users (Al-Somali, Gholami and Clegg, 2009). In addition, Asynchronous Transfer Mode (ATM) network connects ISPs with KACST and ADSL clients whereas the DDN (Digital Data Network) network connects ISPs with leased customers and also for interconnecting different organisations with their branches (Sait, Al-Tawil and Hussain, 2004). Furthermore, all the modems are controlled and operated by STC and Country Code Top Level Domain and sub domain have been working under the registration of CITC (Nassuora, 2012).

According to the research of KACST, it has been evaluated that the use of internet in Saudi Arabia is covered by 37% of total population with an average of 584,000 internet subscribers (Alkhunaizan and Love, 2013). At present, total thirty licensed internet service providers (ISPs) are available in the kingdom whereas the ISU provides the direct internet connection with a bandwidth of 2Mbps to approximately eighteen business and educational systems (Sait, Al-Tawil and Hussain, 2004). The awareness of internet is more dominant in younger and middle aged generation and most of the users lie between the age group of 16-35 (Sohail and Shaikh, 2008). 48.4% of internet users avail the online shopping opportunity for the purchase of different products and services while 3.5 million of total population is engaged in e-commerce activities (Al-Somali, Gholami and Clegg, 2009). Moreover, 47.9 % of total internet users are related to educational sector while out of total internet users; 71% are male and 29% are female (Eid, 2011).

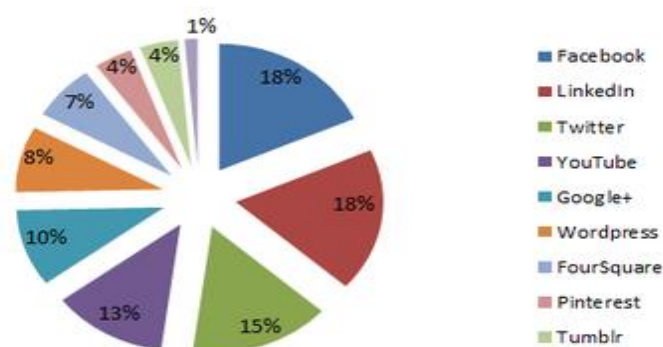


Figure 2.3 Using social media websites in Saudi Arabia (Source Anderson, 2006; Nassuora, 2012)

Figure 2.3 describes the internet users that are involved in different social media websites in terms of percentages. The figure indicates the users of Facebook and LinkedIn with the same percentage of 18% while 15 % users prefer to use Twitter. 13% users use YouTube while the percentages of the users Foursquare, WordPress and Pinterest are relatively very low as compared to other social media websites (Anderson, 2006; Nassuora, 2012).

2.5.1 ICT in Saudi context

Education is identified by the Saudi government as the key to the social and economic development (AlGhadeer, 2012). However, researchers are continuously in search for new methods and techniques for the efficiency of the education system. ICT developments have enhanced processes and methods in different fields, where use of such technology is facilitated and efficiency is enhanced. This research aims to explore the significance of ICT in education. The following section further intends to explore the role of ICT in education.

2.5.1.1 ICT in Saudi's schools

The implementation of ICT in education is largely dependent on the development of an ICT infrastructure in the country. ICT was introduced in the Saudi schools in the early 1980s and was a subject of argument for years (Oyaid, 2009). However, recent studies indicated that this access was limited (AlGhadeer, 2012; Oyaid, 2009; AlSultan 2010). This access was through three main

subjects: 'An Introduction to Computer Sciences', 'Programming in BASIC', and 'Systems Programming and the Use of Information Systems' (Ministry of Education, 2015). Encouraging results urged the Ministry of Education in Saudi Arabia to increase its efforts in order to make computer science classes a compulsory subject instead of being an option in the boys' schools. It is worth noting here that the Ministry of Education used to offer two classes per week for students (Ministry of Education, 2010).

At the end of the 1990s, the Ministry of Education started organising training sessions and workshops related to computer sciences for both teachers and students. However, the main targeted group of students was the intermediate stage students. Since then, the Ministry of Education has been paying more attention to the use of ICT in intermediate schools. The subjects that were taught included Information Technology, Computer Science, Computer Applications, Information Systems, and The Information Age (Ministry of Education, 2015; Oyaid, 2009; Al-Shammary, 2007).

Over the last few years, the Ministry of Education has been actively engaged in the process of integrating technology, especially computers, and developing the basic infrastructure of information and communication technology (AlSultan, 2010), which has contributed to its adoption in education and learning process. However, at the beginning of this stage, it appeared that most of this use was not taken seriously by teachers and students, with most computer skills being confined to basic skills, such as Word, Excel and PowerPoint. According to a report published by the Ministry of Education (2008), there were several projects that were implemented by the ministry in order to integrate ICT into curricula, such as the learning resources rooms which contain information sources, with more than 1500 rooms being founded as part of such projects (the Ministry of Education , 2008). The supply of extra rooms reflected the positive policy of the Ministry of Education in Saudi Arabia in order to integrate ICT in education. However, most of these rooms were only used to store learning resources (AlSultan, 2010). Another effort of the Ministry of Education was exemplified in the several digital technical centres which were established across the country in order to meet the various educational needs in the areas of digital content and educational application of ICT. In 2000, the Ministry of Education in Saudi

Arabia established a total of 300 computer labs for girls' schools at the secondary level in various regions of Saudi Arabia (AlGhadeer, 2012).

The Saudi government has kept pace with the rapid developments with the National Plan for Communications and Information Technology in 2007, where the fourth goal of the objectives of the plan came, as stated in the National Plan for Communications and Information Technology, as an optimum use of communications and information technology in education and training at all levels (Ministry of Communications and Information Technology, 2015).

In spite of these efforts, Saudi Arabia has not been able to achieve the desired success, but was often late; for example, the number of subjects that were introduced electronically in official establishments was very limited, in addition to the lack of reliance on e-content in various educational curriculums (Ministry of Communications and Information Technology, 2015). In addition, the national efforts have not been enough to integrate information technology and communication in education.

2.6 Initiatives taken by the Saudi Government

Given the above discussion, the Saudi Government clearly understands the importance of education, especially given its young population. The government also recognises ICT integration or blended learning to be an obvious technique for the expansion and improvement of education. Investments have been made and initiatives have been taken for the improvement of quality education. The Saudi government considers the development of ICT a national priority to cope with the digital economic challenges.

Indeed, from the above discussion, one can note the immense increase in population; however, the infrastructure for universities has not been developed at a similar pace (Alkhalaf *et al.*, 2012). As such, e-learning can be considered to be a solution for the issues facing education in Saudi Arabia. The provision of education through ICT has several modes, with blended learning being the most adapted method in Saudi Arabia for education. Several initiatives have been lined up for the implementation of e-learning in Saudi Arabia. According to Al-Shehri (2010), most of these initiatives seem to be in the form of national conferences, national projects or specialised workshops. In addition to implementing ICT clubs for students, IT technicians have been employed

in school computer laboratories, while programmes have been developed for primary and intermediate school levels. Furthermore, Alshwaier *et al.* (2012) identified the WATANI National Project, Maarif Initiative, NELC, NCITP and resource initiatives as examples of such initiatives, which are also established at the secondary School level. In summary, in Saudi Arabia, e-learning is considered to be an opportunity for the promotion and advancement of education.

2.6.1 WATANI Project 5

A project called WATANI was announced by the Minister of Education in April 2000, which was a national centralised project. The project included objectives, visions (both for the long and short terms), execution mechanisms and execution phases. The education system found this project to be a great opportunity for the implementation of e-learning in Saudi Arabia; however, no significant progress was observed after the announcement of the project.

2.6.2 National E-learning and Distance Learning (NELC)

The National Plan for IT, which was established by the Ministry of Higher Education in Saudi Arabia 2006, aims to expand distance and e-learning. In 2006, the National Plan for IT developed a national centre NELC (National E-learning and Distance Learning Centre), which supports and provides tools and development resources. NELC supports online content generation and further develops a standard among universities in Saudi Arabia. In addition, these projects have been developed by NELC to enhance e-learning in Saudi universities (Al-Balawi, 2007). Similarly, the main objective of this plan included developing an e-learning application strategy at the secondary school level. The Centre, which is also governed by the Ministry of Higher Education, seeks to facilitate learning within the Saudi universities and to spread education among the young in Saudi Arabia, thus providing sustainable development to Saudi Arabia. Universities of Saudi Arabia are further assisted by the Centre to build a modern society. NELC holds a vision to establish an educational system which may be based on the best methods and techniques of providing education. According to Anuwar and Sri (2011), NELC provides better educational system integrating modern techniques and communication systems.

NCLE further integrates the mission of the government for technical and societal advancement with the principles of Islam. Islam encourages fairness and tolerance; thus ICT developments

through NCLE are implemented in all secondary school institutes without consideration of place and time. Following Islamic principles, NELC believes in achievement of knowledge and proficiency. Furthermore, according to Asiri *et al.* (2012), scientific knowledge and professionalism are appreciated and respected socially. Islam further preaches teamwork, diversification and adherence to the requirements of education. Thus, opportunities for integration and affiliation increase the promotion and enhancement of education. The government understands the importance of distance learning and e-learning for the digital future of the country, thus heads towards digitisation with a firm commitment (Ministry of Communications and Information Technology, 2015).

Multimedia resources are provided for the Saudi universities, which assist in the development of blended learning. NELC also develops Learning Management Systems (LMS), which are also known as Course Management Systems (CMS) or Virtual Learning Environments (VLE), and facilitates both teachers' and students' access to online learning environments. The learning process can also be effectively planned, distributed and evaluated through learning management systems. Al-Khalifa (2010) identified LMS as a solution which enables the effective administration of learning resources.

A learning management system, 'Jusur', has been developed by NELC to promote materials for the beginner courses for undergraduates. This LMS was developed in collaboration with a Malaysian group of companies and employed in King Saud University in 2007 for the College of Application Studies. Jusur enables students to participate in board discussions, upload and download assignments. Although no scientific research reports are available for the implementation of blended learning in the public universities of Saudi Arabia, efforts have been carried out for the development of e-learning.

Alebaikan and Troudi (2010) further identified the effectiveness of the asynchronous methods of e-learning due to the limitation of the Internet bandwidth. Several advantages of Jusur are listed by Al-Khalifa (2010), including being user friendly, easy to operate, efficient, easy to recover data, providing suggestions for recovery and supporting communication both with peers and instructors. Jusur also provides several administrative and instructional functions, supporting

various file formats. However, students experienced some problems while using Jusur, such as inability to download course materials. While Al-Khalifa (2010) suggested continuous improvement in Jusur for efficient use, Alseweed (2013) further highlighted the fact that Jusur does not support languages other than Arabic and English. Another problem identified by Al-Khalifa (2010) is the inability of the instructor to improve students independently from the system. Furthermore, it does not assist the faculty to provide information of the students online at a particular time. Also, the system has a limitation in terms of uploading and retrieving files and is also not integrated with the other administrative systems of the school.

2.6.3 National Communications and Information Technology Plan (NCITP)

The National Communications and Information Technology Plan (NCITP) was formulated and implemented through a directive for the development of ICT in Saudi Arabia. A comprehensive plan was prepared with the assistance of this directive and included short term and long term plans; with short term plans lasting for five years and the long term plans for 20 years (AlGhamdi *et al.*, 2012). Initial targets of the plan were to develop strong e-learning foundations in the NELC. The development of the plan was supervised by the Ministry of Higher Education, which is responsible for service provision for secondary school institutes. The plan included the development of a digital library system.

2.7 Limitations of E-Learning

Although e-learning is considered to be a solution for the extensive educational challenges; it can be fraught with several limitations and shortcomings. While e-learning is a mode of education using ICT methods and techniques, it still lacks the benefits of the traditional face-to-face interaction. This indicates that e-learning can limit effective communication between members of academic community, whether this relates to interaction between teachers and students or to interaction between peers. Furthermore, face-to-face interaction enhances exchange of views, which may not be possible while interacting online. Al-Ghonaim (2005) considers 'blended learning' to resolve these issues by integrating traditional modes of education with the support of online methods. Face-to-face interaction may not be necessarily at the same level as in traditional teacher-centred methods; however, according to AlGhamdi *et al.* (2012), blended learning yet

improves interaction between students and the instructors, while developing mutual trust and understanding.

The adoption of technology in educational contexts is a major limitation in the process of implementing e-learning. Saudi Arabia has a conservative culture, where traditions are given great importance (e.g. segregation between genders); thus, the introduction of new learning methods may bring discomfort. Teachers and students may not be able to feel comfortable while using technology in learning. Significant factors, such as student self-discipline, management support, societal values and student responsiveness, may affect the implementation of e-learning in Saudi Arabia. Unlike traditional face-to-face learning styles, blended learning requires high students discipline and responsiveness. According to Al-Ghonaim (2005), the success of blended learning depends on the learner's ability.

The instructor's role also changes according to the learning mode. Straub *et al.* (2003) observed that the instructor is required to have better monitoring and observation capabilities. However, instructors used to face-to-face classroom style may have difficulty in adapting to the new teaching method. Bonk and Graham (2012) suggested the provision of training for an effective adoption of e-learning. Saudi Students are mostly not aware of the functions provided by e-learning; thus, while initiating e-learning, they spend most of the time on trying to understand and acquire the necessary training for e-learning adoption. Asiri *et al.* (2012) noted the lack of awareness of the Internet and the limited skills that students have when it comes to e-learning, and their hesitance to accomplish e-learning activities. However, several initiatives such as Jusur and Virtual Learning Environments have been taken by the government to provide students and teachers with e-learning training. Educational institutes are also encouraged to support e-learning. Creating some kind of trust in technology for education is crucial for the development of e-learning.

Several methods and techniques have been developed by researchers and scholars for e-learning. Every approach and method has its own advantages and disadvantages. Some techniques eliminate the need for instructors; whereas, some only provide course material online and follow almost the same design as traditional learning (Asiri *et al.* (2012). However, the adoption of e-

learning may depend on several factors, such as geographical location, infrastructure condition and culture. Asiri *et al.* (2012) highlighted the significance of considering these factors before planning an e-learning design. Although Saudi Arabia is a developing country with several initiatives taken for the development of an infrastructure for ICT, students and teachers are very much accustomed to the traditional learning style, where learning is very much instructor-based. The design chosen to be implemented in the secondary school institutes in Saudi Arabia requires 25-50% of the credit hours of the course to be instructor-based. This design not only increases the comfort level of the students, but it also enables the students to benefit from the face-to-face interactive education style.

In an e-learning environment, the course material is mostly available online, which can either be accessed online or downloaded. In case the material is kept only online, the Internet bandwidth can limit access to the content. Students usually face slow access or sometimes unavailability of the course material.

As reported by Oyaid (2009), another limitation regarding the implementation of e-learning refers to the unavailability of course content in Arabic. Not many students in Saudi Arabia master English language and thus find learning difficult in English. Almost all content available on Internet is in English; however, steps have been taken for the conversion of course material into Arabic even though much time may still be required for the process of translation to be completed (Ministry of Education, 2015). This problem seems to be persistent not only with course material, but also exists in the case of instructions. Most of the instructions available for e-learning systems are also in English, which makes it difficult for Arabic students and instructors to understand.

2.8 Conclusion

In this chapter, an in-depth analysis of Saudi Arabia has been conducted, showing the ideal location of Saudi Arabia and its promising demographics. Being an Islamic country, Saudi Arabia's Islamic culture and traditions are prevalent throughout the country. Saudi Arabia is also recognised to have developed its ICT infrastructure at a satisfactory level, having a high number of Internet users (Ministry of Communications and Information Technology, 2015). Analysing the

educational system in Saudi Arabia, it is safe to conclude that the Saudi government has properly structured the educational system in Saudi Arabia, with the Ministry of Education in Saudi Arabia being responsible for addressing educational issues. The Saudi government has also identified the development of ICT to be an opportunity for improving education and educational services in Saudi Arabia. At the end of the 1990s, the Ministry of Education started organising various training sessions and workshops related to computer sciences for both teachers and students. The Ministry of Education is continuously striving to integrate technology with education, resulting in several initiatives that have been taken to achieve this purpose. Some initiatives, such as WATANI Project 5, NELC and NCITP have been discussed in this chapter.

In spite of the initiatives and positive approach of the Saudi government, ICT has not been completely implemented in education in Saudi Arabia due to several reasons. One of the limitations hindering the introduction of ICT in education seems to revolve around the culture of the country. As a result, the conservative nature of the country restricts the effective implementation of ICT in education. In addition, teachers are not accustomed to the new teaching techniques; thus, they may not have sufficient trust in ICT and refrain from including it in their classroom activities.

Teaching styles using ICT vary considerably from traditional learning; thus teachers should be given the appropriate training for the effective implementation of e-learning. In addition, students need to be appropriately trained to be able to use e-learning during their secondary school years. This chapter concludes by stating that blended learning is contextually the most appropriate for the Saudi culture. In other words, most of the hours should be allocated according to the traditional classroom style; in the meantime, online material should be resorted to in order to support and complement the conventional form of learning.

Chapter 3: Literature review

3.1 Introduction

This chapter aims to provide thorough review of the literature related to online education. While the research issue is situated within the Saudi context, it is helpful to relate it to other global experiences and practices. Therefore, the chapter will discuss issues related to e-learning, including: learning theories and pedagogy; Knowledge Building Theory ; communities of practice; ICT in education; ICT in developing and developed countries; e-learning; forums; 21st century learners; and e-learning in Saudi Arabia.

3.2 Learning Theories

New technologies have pervasive impact on all aspects of our lives, and education is no exception. The recent introduction of many new technologies on education is leaving educators with no other choices but to adopt, and adapt to, them. Parents, society, education leaders, students and workplaces are all demanding schools and teachers embrace new technologies, fuelled by a real concern that learning and teaching that do not benefit from new technologies are not preparing students for the 21st century.

The rapid technological advances during the last few decades have provided education with a wide variety of tools. For instance, various tools over the Internet have paved the way for new learning models to emerge, such as e-learning, mobile learning, flipped learning and virtual learning. Online learning, both synchronous and asynchronous, is increasingly becoming popular and adopted by educational institutions worldwide. However, despite the obvious great values of online learning it must be viewed through the lens of its educational potentials, rather than an undisputed solution for all educational issues. Thus, Mayes and de Freitas (2013) stressed that e-learning is considered as 'e-enhancements' of learning models, focusing on its added value to education. Therefore, learning theories can provide helpful frameworks for new technologies and reveal how they can improve teaching and learning practices. Learning theories, according to Taylor and MacKenney (2008), can help us to create an atmosphere that supports learning and assist all students to become competent and well-adjusted individuals.

Mayes and de Freitas (2004) identify three main kinds of learning theories which make fundamentally different assumptions about what is crucial for understanding learning:

- Associative/ empiricist (learning as activity)
- Cognitive (learning through understanding)
- Situative (learning as social practice).

Associative theories study the behaviourist traditions and looks to develop those objectives that are behavioural in nature (Gagne, 1985). This perspective on learning, according to Mayes and de Freitas (2013), encompasses the research traditions of associationism, behaviourism and connectionism. It makes use of selective reinforcement techniques to undertake detailed task analysis and thereby shape up the responses. In this case, the instruction is individualised in the sense that each learner seeks personal attention with respect to active response for queries and immediate feedback is sought. Furthermore, the complex tasks are made easier by breaking them down in smaller and simpler ones so that they become pre-requisites for difficult tasks. Thus, sequences of instruction are designed specifically for students to succeed by learning in small and logically-ordered steps.

In contrast, the Cognitive theories are governed by the constructivist traditions and place an emphasis on the acquisition of knowledge through interactions between new experiences and the already created structures for understanding. In this case, the understanding and learning is developed on a continuous basis through constructing personal meaning and the sense gained through past and present experiences of learning. Vygotsky (1982), under cognitive framework, asserts that the instructors must emphasise the potential of the learners in order to accomplish the task, rather than highlighting what they cannot do at the current state. Vygotsky's theory is based on the premise that knowledge is gained through social interactions and individual internalisation. Vygotsky's theory emphasised how a learner can play a significant role as a problem solver and active interpreter of knowledge. Vygotsky indicated that learners can successfully perform new tasks with the assistance of other people, after which they internalise the new method to attain the same result on their own. Vygotsky further propounded the concept of the 'zone of proximal development' (ZPD), which is defined as the distance between a learner's current conceptual development and that learner's potential capability (Vygotsky, 1982).

Vygotsky believed that a learner's potential capability could be awakened through internal development processes that are as a result of interaction with various people in the learner's environment. The ZPD concept, as coined by Vygotsky, emphasised on the need for improving a learner's current knowledge level to attain the potential competence level which could be attained through guidance from tutors and capable parties. Notably, the zone highlighted the existence of three capability levels in any development process, namely; that which a learner can attain without guidance, that which can never be attained even with help and guidance and that which a learner can attain with assistance. Assistance and guidance is via instructions given by tutors. Any good instruction should be aimed at the developing capabilities of a learner, through offering new tools of enhancing the thinking capabilities of learners. The premise of this concept is that with the help of personal support (guidance) and practice (participation), the skills of the novice learners can be honed and augmented to gain expertise. Knowledge acquisition is considered as the outcome of interaction between new experiences and already created structures for understanding (Mayes and De Freitas, 2013).

The situative theories, according to Lave and Wenger (1991) and Wenger (1998), stress that learners need to learn from others, thus, they should actively participate in communities. Therefore, according to Seale and Cooper (2010), knowledge is seen as situated either in a context or a practice of communities. Greeno (2011) stresses that the situative concepts refer to processes that are hypothesised to occur at the level of activity systems and joint participation in communities of practice. Hence it is necessary that the learning task or context is authentic to the cultural context in which the skills of the task are embedded. In situative theories, the success of learning is highly dependent upon the ability and potential of the learner to successfully participate in the communities of practice. Therefore, the various tools available for communication and interaction in e-learning can extend students' interactions with other group members beyond class time and walls (Xia *et al.*, 2013).

3.3 Theoretical Framework

The current study seeks deep understanding of building knowledge through communication, interaction and collaboration. Therefore, the study adopted two theoretical frameworks to help in gaining deep understanding of knowledge developed and gaining through students' participation in online forums as part of a course, namely: Knowledge Building Theory (Scardamalia and Bereiter, 2006) and Communities of Practice (Wenger, 1998). Both theories are explained thoroughly below.

3.3.1 Knowledge Building Theory

Despite the pressure that technology places on educational institutions for its adoption, the literature warns of ICT adoption driven by faddism (Anderson, 1997; Bradshaw, 2002; Lewis, 1998). That is, educational institutions might adopt a new technology for its technological amusement instead of their potentials for improving education. Thus, Knowledge Building Theory (Scardamalia and Bereiter, 2006) can help progress beyond the technology itself to more fundamental and deep learning.

According to Knowledge Building Theory, students are not mere traditional learners or inquirers; rather, they are members of knowledge building communities (Scardamalia and Bereiter, 2006). Thus, this theoretical framework can help in gaining deeper understanding of using technologies in order to acquire and build knowledge within communities which can be reflected in students' participation in forums through social online interaction and learning.

The Knowledge Building Theory incorporates six main themes and the researcher has adopted five themes of the theory:

First, it views knowledge as community knowledge advancement, rather than individual achievement. That is, knowledge can be created in the classroom through several means, rather than merely accumulated from a textbook or teacher lectures. Students must be encouraged to contribute to knowledge creation in classroom settings and communities as knowledge advances through the contribution of individuals. The goal is to get students to engage in activities with each other, building their knowledge through the creation of 'epistemic' or 'conceptual' artefacts (Bereiter, 2002; Scardamalia and Bereiter, 2006).

Second, the theory concentrates on improving ideas and opening the door wide to more knowledge rather than students' progress toward a true or warranted belief. Students who research particular ideas will arrive at another idea that needs to be improved. Therefore, the idea of improvement is a major objective in the education of designers, scientists, and scholars, as without such a disposition there will be a slim chance for productive careers. Luckily, new technologies can facilitate idea improvement in all areas.

Third, 'knowledge about' is different from 'knowledge of'. The concept of 'knowledge about' dominates classical educational practice: including textbooks, research papers, and curriculum guidelines; on the other hand, 'knowledge of' is concerned more with declarative knowledge. Several situations rely on social activities. According to Bereiter (1992), in 'knowledge about', there is a need to organise knowledge around problems, not topics. Conversely, in education, there is agreement that the best way to acquire 'knowledge of' is through problem-solving. Furthermore, in knowledge building, working with problems can enable students to gain deep structural 'knowledge of'.

Fourth, discourse as collaborative problem solving rather than as argumentation. Knowledge Building theory discourse can play an important and creative role in improving ideas. Collaborative discourse plays an important role in knowledge advancement. That is, the state of knowledge of a certain community is not in the minds of its members; rather, it is in the discourse which is generated by those members. This discourse incorporates commitment to progress, seeking common understanding rather than just agreement, and expanding the base of acceptance. Thus, in classrooms, knowledge-building discourse can be progressive and constructive. However, argumentation does not serve that purpose very well and does not contribute to idea development its emphasis is on evidence and persuasion.

Fifth, the constructive use of authoritative information. While students are asked to question and debate information, it is still impossible for them to function in a society without accepting a large amount of information on basis of authority. There is no way to deny all information or knowledge based on their sources; however, there is a need to balance between authoritative knowledge and other open knowledge for questioning. This

balance is usually based on the task we use the information and knowledge for. For instance, the need for questioning the quality of knowledge and its sources becomes critical when the use of this knowledge can endanger lives (e.g. a design of buildings, bridges or train tracks).

The knowledge building theoretical framework can help in understanding the fundamental role of new technologies in providing rich learning environments for students in order to develop deep learning through interaction and collaboration with others. Fundamentally, new technologies, especially social media, can empower students to become active learners within the student-centred paradigm (Dron and Anderson, 2014). Therefore, Knowledge Building Theory is adopted by the current study as a theoretical framework in order to focus more on the depth and richness of learning. However, as the study is concerned with the interactive and collaborative aspects of e-learning through online forums, the Communities of Practice framework is also utilised in order to capture these important aspects of social learning using online forums.

3.3.2 Learning communities: Communities of Practice

Social interaction is critical to learning (Vygotsky, 1978). Wenger et al (2012) argue that a community of practice can exist wherever there are many people sharing the same conditions aiming to achieve the same goals. Thus, communities of practice can be defined as 'groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger et al, 2012, p.4). Learners improve, construct and make their knowledge explicit by working with other learners. Furthermore, according to Wenger et al (2012), learning is a social process where knowledge is constructed through the process of participating in a group. Figure 3.1 sets out Wenger's model.

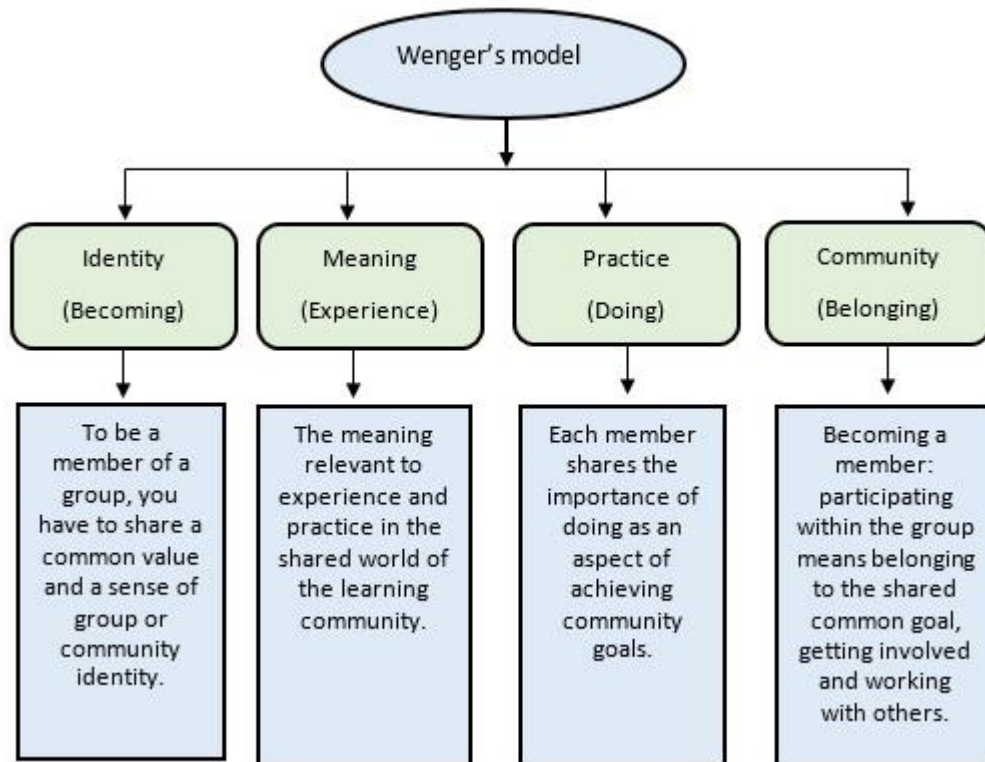


Figure 3.1 Wenger's model: components of Community of Practice within the e-learning process (adapted from Conole et al., 2003)

In a knowledge-based society, it is essential for students to learn thinking collaboratively, especially that information and communication technologies support the collaborative thinking (Garrison, 2016). Such interaction takes place in an environment featuring a link between social constructivism, learning and teaching. Constructivism in education, according to Sjøberg (2010), refers to how a learner constructs knowledge and meanings. Traditional learning allows students to build a peer network that, at a later stage, may develop into a powerful, effective professional network. However, learners' characteristics and personalities play major roles in their accomplishments and benefits from the engagement in the community. Therefore, Rovai (2002) argues that in an e-learning environment, those who display high levels of group awareness and cognitive learning skills are less likely to feel isolated. They are more able to accomplish educational tasks. In addition, such learners are active in their construction of knowledge as it is based on their own ideas, which are socially and culturally shared (Taber, 2006). Therefore,

communities are defined by their members; while the technology supports the introduction of e-learning models, success depends on the members. Students with similar interests work together and so knowledge in the group is considered vital (McGregor, 2003). While students' combined knowledge becoming the basis for learning may appear more suitable for mature students, this idea has been implemented in primary schools (Sajid, 2011).

Learners' commitment to a domain in communities of practice is vital. Individuals are more efficient and effective in benefiting from information and experiences through social presence, motivation and collaboration (Wenger, 1998). A community of practice does not merely comprise a group of people who share a common interest, but practitioners who share resources and go on to develop their practice through methods, such as problem solving, identifying gaps, or requesting information (Wenger, 1998). Therefore, a community without commitment to a domain is merely a group of friends rather than a community of practice. The commitment to a domain, according to Wenger et al (2012), creates a sense of accountability to a body of knowledge.

According to Campbell and Southworth (2002), providing a secure and familiar platform for students to interact is paramount. They argue that open communication in regard to the aims and purposes of the community of practice means that students can engage in the community and monitor their own studies. This concept interrelates to Laurillard's (2002) four dimensions of the teaching-learning processes which are:

- Discussion between the teacher and the learner.
- Adaptation of the learners' actions and of the teacher's constructed environment.
- Interaction between the learner and the environment defined by the teacher.
- Reflection of the learner's performance by both teacher and learner.

Furthermore, Laurillard (2012) stresses that the academic community should challenge digital technologies, which are 'knowledge technologies', based on the needs and requirements of students. However, it is a matter of fact that these knowledge technologies shape *what* is learned by changing *how* it is learned. Nevertheless, although new digital technologies have great potentials, in education they must be viewed from their educational value. Therefore, the fundamental question is whether the new technology has an added-value for education or not. Thus, next is a discussion about ICT in education.

3.4 ICT in education

During the last decade, young and older people have shown increased interest in improving and updating their computer skills and knowledge; predominantly for reasons of work and socialisation, given that computers and mobile technology are now constant companions for rapidly increasing numbers of people (Giannakopoulos and Eybers, 2015).

In education, there is a legitimate pedagogical rationale for the integration of ICT in education which emphasises its role in improving teaching and learning (Hawkrige, 1989; Subhi, 1999; Cuban, 1993). The pedagogical rationale of integrating ICT in education stems from the work of scholars such as Vygotsky and Dewey, whose works have stimulated a range of educational theorists who wish to change schooling from that place where 'knowledge' is 'transmitted' to a place where students become active and dynamic participants in learning (Cuban, 1993) rather than playing a passive role in a 'banking system', where the teacher is the 'depositor' and student's mind is where 'knowledge' is deposited to be recalled later (Freire, 2000).

In order to achieve learning goals, the learning environment should provide rich experiences through the combination of several learning and teaching methods (Harriman, 2004; Garrison and Vaughan, 2008; Graham, 2006). The rapid development in information and communication technologies has provided education in general and e-learning in particular through a wide variety of tools which can facilitate both teaching and learning. Web-based courses can benefit heavily from various tools available such as Forums, wikis, Blogs, Facebook, Twitter, and YouTube.

In a study conducted by Sánchez and Salinas (2008), they examined a Chilean educational programme, which integrated Internet and computer technologies into the school curriculum. They found that progress in using personal digital technology devices - such as laptops, mobile phones, smart phones and mp3 players/recorders - could promote ICT into school learning and teaching processes. In addition, Barak's (2007) study examined the impact of integrating ICT technologies on traditional teaching. The study was applied to four web-based chemistry courses and based on incorporating an electronic forum and computerised visualisation into the curriculum. The results revealed that the integration of ICT in general and forums in particular in the teaching and learning of chemistry was both successful and useful. Therefore, drawing on the findings of the study, Barak recommended further collaboration between educational researchers,

organisations and policymakers, to encourage ICT integration as a pedagogical method in education. Stephenson (2001) also reported learners' enthusiasm for web-based Internet learning. However, in another study conducted by Sánchez *et al.* (2010), they found that integrating ICT into the educational curriculum needs to consider a variety of factors, including: Internet access within schools; teacher ICT training; and developing national policies to establish successful e-learning environments.

However, countries and communities are widely different in the utilisation of ICT in education. The 'digital divide' emerged in the first place to distinguish between those who have technology and who do not. In education, although the digital divide has been shrinking rapidly in terms of access to technology, there are other aspects of the divide which have not shrunk, such as 'social divide', 'Global divide', and 'Democratic Divide' (Norris, 2001).

Haydn and Barton (2007) conducted a study to explore the views of teacher trainees and their mentors in two different school subjects on what strategies, interventions and resources had a positive impact on their ability to use ICT effectively in their subject teaching. The study concluded that despite the majority of countries investing heavily in education, especially in the training of teachers in the use of new ICT technology, many efforts are still required in order to consider the effective elements of ICT and how to use them successfully in the teaching process. Similarly, Probert (2009) conducted a study involving three New Zealand schools, which investigated teachers' understanding of information literacy and their associated classroom practices. She reported that teachers in schools require more training to improve their abilities in developing e-learning skills such as searching online, understanding contexts and evaluating online educational resources.

It has been reported that integrating Web 2.0 tools such as 'wikis' and 'blogs' has an added-value and can enrich e-learning activities, coursework, assessment and teacher feedback (Dermo, 2009; Frydenberg, 2008). Lai and Ng (2010) conducted a study exploring innovative and unique practice among two classes of information technology who utilised Web 2.0 tools. The conclusions indicated that wiki-based activities are useful in developing a diverse range of student teacher capabilities and can play a significant role in their learning.

3.5 ICT in developing and developed countries

Schools worldwide have been advocating considerable funds and resources for the procurement of hi-tech technologies in the hope of improving their outcomes (Warschauer et al, 2004). Both developing and developed countries are struggling to equip their schools with the appropriate technologies with a growing belief that technology plays an important role in promoting effectiveness in both administrative and teaching–learning processes (Gülbahar, 2007). Therefore, there has been increasing demand for educational systems to undertake changes that embrace ICT in order to stay abreast of societal and technological demands and changes. Nevertheless, this demand has been overshadowed by some doubts that technology may be ineffective in improving educational outcomes when schools fail to use and apply it productively (Dimmock, 2000).

For developing countries, the integration of technology within education is seen as a national strategic decision (Abuhmaid, 2009) as it is believed that ICT is the main driver of economic growth and prosperity (Kozma, 2005). In addition, developing countries have a large proportion of their citizens who are students; therefore, the investment in education is seen as investment in the future. Thus, governments and education systems are increasingly pressured to embrace the promise of ICT (Durrant, 2001). For instance, in Jordan, as all other countries in the region and worldwide, there have been many projects and initiatives (e.g. Education Reform for the Knowledge Economy- ERfKE and Jordan Education Initiative-JEI) during the last few decades aiming to infuse ICT across the educational system in order to prepare schools and students for the knowledge-based economy (Abuhmaid, 2009).

In 1997, the World Bank initiated the World Link Program², to guide and help schools and educational institutions in developing countries to integrate ICT and digital methods into educational curricula and approaches. This programme aimed to prepare students and teachers in these countries to adapt to the global network age, obtain new skills and build effective learning communities (World Bank, 1997).

Developing countries such as South Africa, Hong Kong, Egypt and Malaysia (Iahad et al, 2004) have experienced a continuous and dramatic growth of e-learning techniques in different fields, especially education. This is largely due to the development of ICT and success of designing e-learning environments, which have been adopted by government, educational organisations and

other community sectors. Jeong and Lee (2008) assessed student responses to online education, concluding that online education is not an option for every student, as it requires learners to be highly skilled and active. Students who participate must already have basic computer and Internet skills.

Likewise, developed countries are racing to benefit from ICT by integrating it within their education systems. In several developed nations, such as New Zealand, learning through the use of computerisation has been considered a social benefit impacting on other human service sectors, particularly education. ICT has prepared students to work in the electronic and information environments. The integration of ICT in secondary schools can therefore promote enhanced teaching and learning, and sustain professional development (Abbiss, 2009).

Byron and Britain (2008) point out that young learners and adults in developed countries are exposed to a range of ICT applications in their daily routines. Accordingly, the integration of ICT in learning is not exactly novel in these locations. However, they also highlight the lack of financial and IT resources in developing and Third World countries, which greatly hinders the shift from traditional teacher-centred methods of learning to e-learning.

In most developed countries, education systems are infused with Information and Communication Technologies (ICT) to support activities of teaching and learning. Weller (2002) argued that ICT integrated learning has had a positive impact on both teaching and learning. Consequently, many institutions currently adopt e-learning as a mode of course delivery. Students' learning materials, including lecture notes, assignments, guidelines and course materials, can be uploaded online and accessed through a unique username and password. This concept brings significant flexibility to learning styles, especially for working students who cannot attend classes on a regular basis.

3.6 Twenty First Century Learners

Undoubtedly, today's students are different from older generations of students. The rapid developments in information and communication technologies have influenced all aspects of young people to a large extent. However, the pervasive role of new technologies in students' lives has reshaped their daily lives and their views of the world. The 21st century students thereby encounter a constantly and rapidly changing world.

Prensky (2001) coined the terms 'digital natives' and 'digital immigrants.' The two groups use technologies differently as the digital natives use them fluently while the digital immigrants might struggle when using them. Small and Vorgan (2008) pointed that children who use the Internet and computers extensively engage with materials differently for those who use them less. They found that when the two groups use the internet for searching or reading they use different parts of their brains. The 21st century students are constantly connected through social media as these tools have added new potentials to the internet. These students may even feel that they belong to this virtual landscape (Sprenger, 2010).

3.6.1 The impact of the Internet on 21st century learners

Kozma (1991) proposed that the media influences learning, as media is not neutral during communication and learning. New technologies, specifically the Internet, have a deep impact on young students' learning, interactions, and even their cognitive abilities and process of information. Vidyarthi (2011) stressed that browsing the internet influences the way young students engage with digital resources and the attention span of young students has alarmingly decreased over the last fifteen years. Nevertheless, the internet has changed many aspects of educational landscape.

According to Buckingham and McFarlane (2001), children are negatively influenced by the media in terms of their thought processes and behaviour. However, the authors did not consider the positive nature of the media as a means of building knowledge and developing educational skills; nor did they attempt to explore its broader impact on learning. The Internet and the media have important roles in building knowledge for young people. Buckingham (2007) later identified the powerful and creative effects of the media on children in a study that reviewed media technologies as a means of providing children with opportunities for self-creativity and fulfilment. This more optimistic view, which centred on the relationship between digital media and children, suggested that the former provides many associated advantages with regard to the attainment of communication skills and knowledge.

Byron and Britain (2008) reported the positive and negative effects associated with the Internet and video games on children in terms of their behaviour and educational outcomes. They drew a firm conclusion about the impact of such new media and technology on children and young people over the last decade. In addition, Lillard and Peterson (2011) stressed that media education could positively influence young people and help them become less vulnerable to the negative aspects of media exposure.

Byron and Britain (2008) identified online media as particularly beneficial to the development of skills and suggested that the protection of children engaging in such media needed to be considered more thoroughly. The authors also concluded that research on the online risk to young people has shown there to be a correlation between risks and benefits. Even though children are exposed to inappropriate and negative beliefs, attitudes and web contexts, there is no clear approach for governments and organisations in controlling such harmful material and websites, particularly when the majority are related to economic and commercial issues. Further, the study reveals that the Internet lacks any filtering or protection mechanisms; therefore, issues related to ambiguity and ubiquity, as well as damaging information without filtration or classification, have a direct influence on everyone using it. Children are unlikely to have the necessary ability to make correct judgements about the objectives associated with this kind of information, and often do not know how to behave appropriately.

Atolagbe (2002) stated that in the e-learning environment, when compared with traditional 'face-to-face' learning, the student is able to take on initiatives and acquire an acceptable level of computer skills and ICT knowledge during the process. This is based on the course design and the online mode of instructions.

Researchers in education and e-learning argue that in the developed world, where ICT and web-based systems are part of the associated lifestyle of children and young people, schools should learn and follow the way that children and young people use digital media for entertainment in their leisure time (Buckingham and McFarlane, 2001). Learning techniques and a relevant school curriculum for the digital world need to be developed – because electronic, interactive media is now so dominant in the lives of young people, and the technological revolution of recent years has been so dramatic, that failure to utilise these technologies would make little sense, and surely result in students being demotivated by old-fashioned textbooks and teacher-centred methods.

Seale and Cooper (2010) explore the accessibility of e-learning resources; the relationship between pedagogy and technological terms. They argue that the development of e-learning environments is strongly associated with access to ICT, web-based systems, Internet facilities (especially in terms of virtual learning environments), digital and multimedia tools, web portals, and discussion boards. Thus in education, modification of methods and general pedagogy is necessary to increase student and teacher accessibility to e-learning resources.

Research has also helped determine the relationship between technology and pedagogy in e-learning (Harasim and Yung, 1993; Conole *et al.*, 2003). This relationship fundamentally influences both teachers and learners. Teachers need more understanding and responsibility with regard to accessibility issues within the learning context. Considering the assumption that technology and pedagogy are separate, the expectation would then be for teachers to take responsibility for the e-learning material and technicians for the technical parts of it (Seale and Cooper, 2010).

Schrum *et al.* (2007) explored and assessed an online course for faculty members in post-secondary institutions in the US, in order to understand how participants (faculty members) responded to this type of education. Those participants who believed that activities, assignments, and tasks would be easy faced challenges in gaining the deeper understanding necessary to achieve the goals and targets of the course. A minimum level of computer and web-based knowledge was required of every learner in order to be effective in this environment.

Lee and Lee (2008) used the term 'e-learning environment', pointing to the integrated learning content with a learning management system (LMS). Barchino *et al.* (2005) describe the LMS as a web computer system that focuses on the management of communication in e-learning process elements (administrator, teacher and learner). It is also a management tool for online forums, email, chats or video conferences. Monitoring learner activities in online processes is a major managerial task; the most important aim of the LMS is to track learner progress registration, learning resources and learning performance (Rapuano and Zoino, 2006).

Despite e-learning processes having been developed and applied within a global context by many educational organisations and governments, many challenges remain, particularly in the

developing world. Kellner (2006) notes that despite the computer revolution, its influence in education in developing countries is impeded by the lack of up-to-date computer hardware and software, insufficient teacher training, and inadequate development of cutting edge educational policies. With most e-learning courses and training designed in developed countries with advanced technologies such as video streaming, web technologies and server-based learning management systems, developing countries are unable to keep pace with this.

However, whether in developed or developing countries, national policies need to incorporate teaching and learning using ICT, a focus on teacher training programmes, and enhanced Internet availability and access.

3.7 Online communities

Information and communication technologies have created new opportunities for education. That is, students and teachers are not confined to the time and walls of classrooms. They can continue teaching and learning, relying on various tools made possible by the technological developments. Therefore, interaction, collaboration and communication can continue beyond the physical space. Thus, learning communities can be created and maintained depending on new technologies.

Making benefits from various tools available on the internet, educators build supplemental virtual spaces for classrooms. In addition, as social networks are increasingly gaining popularity among the 21st century students, educators are striving to utilise these technologies in teaching and learning. However, despite the emphasis by a large body of research on the importance of communities in e-learning (Rovai, 2002; Shea *et al.*, 2010; Wenger, 1998), the notion of building online communities was seen by some as a 'fluff' in e-learning (Palloff and Pratt, 2007).

Creating a successful virtual community is not a straightforward task for educators. That is, creating a virtual community is easy; however, maintaining it is hard because, according to Salmon (2004), successful dynamic groups in e-learning environments depend on building cultures in which knowledge is shared. Therefore, careful attention should be paid to maintaining online communities in order to benefit teaching and learning. Accordingly, Salmon's (2000) model introduced a five-step model describing the learner's experience in e-learning:

1. Access and motivation - the model focuses on the challenges and difficulties that learners may face and the associated procedure they can use to access the e-learning system.
2. Socialisation - every learner needs to establish his/her online identity, and search for other participants in the same online course. This practice builds online social interaction and communication.
3. Information exchange - as a result of the previous stage, the learner starts to interact either with course materials or with other participants. Thus, he/she starts to cooperate and exchange information.
4. Knowledge construction - the learner becomes more social and starts to participate in asynchronous online discussions to build knowledge.
5. Development - when learners reach this stage, they should be responsible for their own learning, and seek further benefits from the e-learning system. Learners should be able to think critically, be self-reflective, and start to suggest different ways to improve learning conditions.

Apparently, successful access and communication in the online community depends heavily on the electronic moderator's role in connecting learners together and follow their activities and participation. Thus, Vonderwell (2003) stressed that instructors should play effective roles in facilitating student discussion and dialogue. However, according to Salmon (2004), it is also important to encourage learners to develop ways to monitor and evaluate their own learning which may provide valuable contribution to the development of e-learning courses and course material. Moreover, Palloff and Pratt (2001) stressed that the success of online learning depends on the learner developing skills sufficient to reflect on their own learning, and interact with their peers.

Students' presence and participation in the online communities is essential for their benefit. Their interaction can take the form of reflection, peer groups, support staff, instructors and learning material (Draffan and Rainger, 2006). The results of a study conducted by Dewiyaniti *et al.* (2007) concluded that students preferred working online in groups. De Smet *et al.* (2008) conducted a

study aiming to evaluate cognitive development in online group discussions through an analysis of peer tutoring behaviour. They found that contextual factors influenced tutors' behaviour as they focused essentially on explaining student tasks, guiding students to further learning resources, modelling and structuring the discussion. In addition, they found that the most important contribution by students was to show social commitment. Furthermore, in asynchronous e-learning discussions, according to Schellens and Valcke (2006), students can be very task-oriented, and group size becomes an issue when smaller groups of learners have significant, valuable interactions and demonstrate better performance in terms of knowledge construction.

In addition, learner interaction and collaborative knowledge within virtual communication usually takes two forms: instructor to student or student to student. Schrire (2006) examined the methodological difficulties involved in defining collaborative knowledge building processes within an asynchronous discussion. Finding ways to encourage active participation is vital. Traditional teacher-centred methods do not prepare students to be active learners in online course environment. Therefore, according to Palloff and Pratt (2001), students need to be taught, and master, knowledge and skills to be able to obtain knowledge, cooperative skills and accomplish tasks while functioning as part of a group. Garrison *et al.* (1999) also indicated that developing effective and successful groups of learners is directly associated with the interaction between students and instructors. Shea *et al.* (2010) conducted a quantitative analysis of teaching presence in online college courses and found significant relationship between the level of connectedness and the sense of classroom community in online course.

Exploring a sense of group or community is vital to deepen the understanding of learner behaviour, satisfaction and communication within asynchronous e-learning environments (Wenger, 1998; Salmon, 2000; Conole *et al.*, 2003). However, learners in e-learning need to have the same self-discipline as with real, 'face-to-face' interactions with other learners and the teacher (Rovai, 2002). Thus, the role of the teacher, argue Bess *et al.* (2002), becomes essential in the success of an e-learning. The teacher's skills in creating a sense of group belonging is vital in ensuring that the learner persists with their studies (Gannon-Leary and Fontainha, 2007). In addition, the teacher who observes students' online discussions should pay attention to details in

the learners' planning and involvement in order to create an environment where learning takes place and ideas are shared (Palloff and Pratt, 2001). Therefore, the teacher who is involved in such learning environments should have additional skills regarding the ability to manage online conversations (Armstrong, 2008).

When teachers create virtual communities they must strive to develop a 'sense of community' among the members. The 'sense of community' is defined by McMillan and Chavis (1986) as a 'feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together' (p.9). On the other hand, Unger and Wandesman (1985) mentioned that it involves feelings of membership and belongingness and shared socio-emotional ties. Thus, the sense of community underlines the interdependence among learners as they share the same beliefs while they maintain connections and interactions during the learning process in order to achieve its goals.

According to Haythornthwaite (2004), there are three important types of communication to be considered in virtual communities: content related communication; planning for tasks; and social support. These types of communications should be considered in order to maintain virtual communities. Typically, students need to ask questions about course contents; therefore, opportunities and tools enabling such questioning are essential. In addition, it is essential for students to communicate with others within the community, especially when producing something like a project or an assignment with peers. Furthermore, social interaction within the community is desirable for creating mutual understanding among students and support.

3.8 E-learning

E-learning is strongly associated with the development of Internet and web-based instruction (Khan, 2001; Alonso *et al.*, 2005; Khelifa, 2002). E-learning technology is effective in a variety of fields, such as: Business (Bose and Mahapatra, 2001; Kelly and Nanjiani, 2004); Marketing;

Management; Institutional Research (Leidner and Jarvenpaa, 1995); and education (Bates, 2005; Jochems *et al.*, 2004).

The integration of computers and the internet into the education system has resulted in a shift from centralised classroom-based education towards distributed e-learning courses that can be taken anytime and anywhere. Both synchronous and asynchronous learning are valuable to education and each type supports different purposes. While synchronous e-learning requires both sides of communication to be present, the asynchronous does not and this particular aspect is a key component of flexible e-learning (Hrastinski, 2008).

E-learning is defined in different ways; vendors, academics, and professional agencies provide different definitions. For instance, while vendors' definitions are written to put them at centre stage, academics and professional agencies are more authoritative (Fee, 2009). The Association for Talent Development (ATD) defined e-learning as anything delivered, enabled, or mediated by electronic technology for the explicit purpose of learning (<https://www.td.org>). Therefore, according to the American Society for Training and Development (2006), e-learning refers to using computers in some fashion that has a positive effect on learning. According to Koohang et al (2009), e-learning is the delivery of education including the activities of instruction, teaching, learning and assessment through various electronic media. Most definitions (Mandinach, 2005; Govindasamy, 2002; Mason and Rennie, 2008) refer to e-learning as a process in which ICT is used as a fundamental component in establishing learning environments.

Generally, e-learning equates to online learning; its pedagogical aspects have experienced comprehensive growth and involvement (Peñalvo, 2008). Mason and Rennie (2008) addressed the issue of designing learning courses with web tools. They highlighted web-networking and online practices such as computer conferencing, email communication, blogs, forum and other services, which support social learning and have created valuable community work environments. New educational opportunities have developed, based on incorporating online techniques and media contexts in learning and teaching.

For the current study, Garrison's (2011) definition of e-learning has been adopted which defines e-learning as 'electronically mediated asynchronous and synchronous communication for the purpose of constructing and confirming knowledge' (p.2).

3.8.1 E-Learning: An international perspective

E-learning has been adopted and implemented over the last few decades. Experiences from countries worldwide have provided a clear view for other countries trying to implement e-learning projects in order to take into account the opportunities and challenges in such initiatives.

This section introduces experiences from both developed and developed countries.

3.8.1.1 E-learning in developed countries

In developed countries, e-learning, knowledge sharing, the communication revolution and information transfer are all growing rapidly (Sife, 2007). Conversely, in developing countries, despite the integration of ICT in education, many challenges remain in shifting from the instructor-led classroom to student-centred education, including a lack of financial resources to establish e-learning environments in schools and a lack of student adaptation to new educational technologies. Many efforts are needed for those countries to move towards the lifelong learning era (Sife, 2007; Zhang and Nunamaker, 2003). For instance, in Canada, where significant investment has been made in technology, Abrami *et al.* (2008) examined empirical research studies about e-learning in Canada during the first five years of the new millennium (2000-2005). The findings suggest that in developed countries such as Canada, an increasing number of students prefer to enrol in online courses as the utilisation of asynchronous and synchronous e-learning are growing rapidly. Yet there is considerable fear that the cost of establishing high speed, web-based access would be greater than expected, as well as concern that e-learning can have a negative impact on children's creative skills (Zhang *et al.* 2004). However, a comparative study of 355 cases demonstrates that there are little to no measurable differences in learning outcomes and grades between traditional and e-learning based study (Russell, 2001).

From a policymaking point of view, Abrami *et al.* (2008) highlight that Canada needs to make more effort to implement e-learning technology, particularly in higher education, and fill the gap between theory and practice. There is a need to determine when and how to implement e-

learning environments, and analyse all conditions that lead to success, particularly in technology-based courses and course delivery. An increasing number of learners like to learn online and prefer remote learning, either partly face-to-face or completely via distance education, through either synchronous or asynchronous techniques (Abrami *et al.*, 2008).

The 'delivery', 'technology' and 'chronology' dimensions tended to reflect aspects of blended learning, as different courses were implemented based on classroom and remote educational modes using ICT methods. The 'authentic', 'role' and 'pedagogical' terms focused on the idea that self-motivated learning can be. 'Focus' refers to a learner's aims being as important as those of a learning organisation; while 'direction' considers those aims as equal to organisational ones. Abrami *et al.* (2008) concluded that there has been increasing use of blended e-learning by researchers, institutions and practitioners in the UK. However, there is a need for institutional monitoring and evaluation of blended learning, and to highlight learners' experiences to improve outcomes and enrich skill levels. Sharpe *et al.* (2006) also suggest the need for further research on student satisfaction in either asynchronous or synchronous blended environments.

In the UK, the formal education system provides access to online educational resources; many primary and secondary schools now have virtual learning environments (VLE), or Blackboard. Similarly, the Department for Children, Schools and Families (called now Department for Education) has developed many e-learning strategies to integrate web-based and computer technologies into the pedagogical and educational curriculum (DCSF, 2005). Sharpe *et al.* (2006) cite the example of Greece, where a combination of video conferencing and asynchronous environments was deemed a future strategy for learning in Adult Education. The aim was to focus on student social networking and building blended learning that takes into account remote education.

3.8.1.2 E-learning in developing countries

Despite the exponential growth and spread of e-learning worldwide, there are still differences distinguishing developing and developed countries in their uptake of this trend (Gerbic 2005; Lee *et al.*, 2009; Zhang, 2004). Although the 'digital gap' is shrinking between developing and

developed countries in many aspects, there are still some aspects of this gap which cannot be ignored in terms of infrastructure as well as their diverse cultural backgrounds.

El-Deghaidy and Nouby (2008) examine teacher preparation and training in regard to the incorporation of electronic techniques in an Egyptian teaching programme. Positive attitudes towards e-learning methods were beneficial, particularly for those teachers who had undertaken effective exercises and training compared with those who had not. In higher education, where most young learners are proficient in computer and web-based skills, such a style can aid them in the achievement of educational goals. In contrast, however, secondary school students may lack web and computer skills necessary in e-learning; thus assessment prior to course registration is recommended. Thus, the potential correlation between general computer and IT skills and positive attitude towards adopting e-learning can be highlighted.

Gerbic (2005) discusses previously documented research on Chinese students and how they learn and describes Asian students as focusing more on rote learning and reproduction than questioning and critical thinking. The hierarchical nature of learning in some Asian communities is teacher-centred: the teacher is considered a formal authority, while the student acts as a respectful listener (Brookes, 1997). This traditional approach, in which the teacher controls the learning process while students are less independent, naturally affects the implementation of e-learning models. However, Haythornthwaite and Wellman (2002) argue that this view can be oversimplistic and there are exceptions where conventional pedagogical way of delivering learning has successfully been blended with both asynchronous and synchronous e-learning, despite cultural and technological differences.

However, the merging of technology with educational and pedagogical approaches has only recently begun and because of cultural influences, requires more effort in order to succeed. In such a regard, Duan *et al.* (2010) conducted a survey questionnaire of Chinese students to investigate innovation attributes relevant to e-learning programmes provided by UK universities. They found that 35% of the participants expressed a positive attitude towards e-learning courses, 26% stated they were not likely to adopt this approach, and 28% were not sure. This confirms that a considerable number of Chinese students are unlikely to prefer e-learning courses.

Another example of a developing country would be South Korea. Lee *et al.* (2009) note that South Korea is one the fastest growing investors in e-learning, particularly in higher education. This is because of a high literacy rate (97%), the usefulness of instructor characteristics and learning materials that differ from traditional teacher-centred methods of learning. The growth rate of e-learning in South Korea also relates to the progress made by the ICT industry and the high average of Internet usage (the fifth largest Internet market in 2002) (Misko *et al.*, 2005). This demonstrates the transcending nature of ICT and the disruptive effect it can have on traditional teacher-centred methods of learning, despite deep-rooted cultural differences.

Keung and So (2005) argue that in Hong Kong, transferring ICT into the classroom requires primary and secondary schools to establish specific e-learning platforms. They also confirm that, although training on using technology was provided for both primary and secondary school teachers, there was a difference between them in terms of their implementation. Secondary school teachers are more interested in and engaged by e-learning than their primary counterparts. In Hong Kong, secondary schools have been teaching computer modules since 1982, giving secondary school teachers more opportunity to adapt themselves to ICT. This is likely to change as development in ICT trickles down to primary schools and e-learning receives more favourable response.

Gunawardana (2005) discusses the challenges and advantages of e-learning in Sri Lanka. A survey was conducted of 50 educational institutes from different regions in the country, to explore characteristics of e-learning and its applications. The findings indicate very limited investment in developing and improving the e-learning process towards a complete electronic curriculum. Promoting the use of ICT and web-based tools in schools is necessary to encourage the delivery of educational materials and effective e-learning environments. The ambit of the study was quite a big one and the findings echo, to some extent, the results found in India, as will be discussed below.

Arora (2006) studied the ICT equipment in public secondary schools in rural India. Although there was a government initiative and partnership between the public and private sectors to construct

e-learning processes in public secondary schools, there are challenges in implementing sustainable e-learning environments. One major barrier is that of language software; investment in multi-language software is needed, as well as in training teachers on the pedagogical and educational principles of using computers and the Internet in the learning process. Pawar (2005) notes that the diversity and variation of cultural backgrounds of students across Indian regions impacts upon education quality. Thus, constructing a web-based system to cover the entire Indian sub-continent is required to standardise learning and teaching resources, methods, curricula and techniques. Pawar also notes that this may be helped by the common preference for English language within the Indian sub-continent and increasing spending in ICT by local and national governments and the private sector.

From an African perspective there are similar economic and ICT infrastructural differences within the nations. In Africa, integrating ICT into education has been recognised as a necessary step to transform e-learning and meet the growing demand for the Internet in education, particularly in higher education institutions. Adam (2003) studies ICT infrastructure used in methods of lifelong learning in the African higher education sector. He notes that policymakers were not interested in higher education, as they believed it only benefits particular individuals for various reasons and investment in this sector was essentially made by the World Bank. Moreover, limitations in Internet bandwidth at universities have affected Internet access for students and teachers.

A comparison between African universities in terms of web-based accessibility indicates that African countries can be classified into two categories. The first comprises those countries where universities are served with better web presence, such as Algeria, Angola and Kenya; while the second includes places where universities suffer from low web presence, such as Burundi, Cameroon and Ethiopia.

According to Ajadi, Salawu and Adeoye (2008), there has been an increase in e-learning and distance education in Nigeria. Considerable effort has been made by the National Open University of Nigeria (NOUN) to promote e-learning processes by providing high quality, accessible and inexpensive education. Education delivery occurs either by synchronous or asynchronous

methods, such as video conferencing or e-mail. However, national policies appear limited in improving learner accessibility and motivating remote, lifelong education.

Gichuho and Hampel (2005) address the e-learning process in Kenyan higher education, and introduce a new concept called 'Asynchronous Distributed Knowledge Spaces' to investigate to what extent knowledge can be distributed to remote learners without constructing synchronous network infrastructures. Taking into account the importance of developing strong educational approaches, their conceptual framework was developed based on the learning process as a personal option; students and teachers interact with learning materials in their preferred way. For example, they can print the materials, view them on the web and choose a visual approach or problem-solving task. Students can obtain course content and updates via asynchronous tools such as e-mail. The model was developed as a solution to expensive, on-campus higher education delivery. This solution has recently been criticised in a report by Kazmer (2012) as isolating students by denying them from the collaborative nature of on campus study. However, it can be argued that a blend of both asynchronous and synchronous study is a solution to this problem (Andersen, 2008).

In developing countries, asynchronous and synchronous e-learning are significantly affected by the challenges of establishing ICT systems. A firm, robust investigation of such barriers was carried out by Hawkins (2002) whose findings, based on the World Link Program, are presented in Table 3.1. Financial and technical limitations impact on the establishment of computer labs with sufficient Internet facilities; but in cases where this can be done, great progress has been made.

Table 3.1 Lessons of implementing e-learning experiences in some developing countries (World Bank Link Program; adapted from Hawkins, 2002).

Lessons	Challenges	Examples of the challenges
Working with computer labs	Most schools in developing countries lack hardware, software, and access to the Internet	Computer labs facilitate student educational achievement(example, Ghana)
Technical support in schools	Even when establishing computer hardware and labs in schools, they usually have a lack of technical support	Most educational institutions in the developing world are not fully equipped with computers
Non-competitive telecommunications infrastructure, policies, and regulations	In developing countries, the Internet is an expensive service. Hence, ministries of education need to invest in web-based services	Six schools in Mauritania have high speed Internet access. As a result, the majority of teachers and students did not report problems with web access
Wireless to connect schools	Line dial-up connectivity is poor; Internet service and should be replaced by wireless	In Uganda, five schools participated in the World Links pilot project, which supplied wireless so that students had more opportunities to use the Internet and send emails
Get the community involved	Lack of financial resources is the main problem in establishing a web-based system in schools	An effective solution for schools is to share facility cost with the local communities. For example, fifteen schools in Uganda shared a 256Kps space segment
Private-public sector partnerships	Forming partnerships between educational organisations and the public sector is needed to equip school ICT labs	India is an example of a country where many states involved private companies to provide schools with ICT
Linking ICT and education efforts	Establishing ICT equipment is not enough, so developing pedagogical approaches on how to use this technology in education is important	It is important to link the methods and tools (computer and Internet) with learning curriculum approaches and pedagogy
The importance of training	Providing school teachers with training is an essential step towards successful e-learning	The Links program trained teachers in Peru, focusing on how teachers use technology in education. Consequently, there were improvements in student educational output
Technology empowers females	Internet accessibility is like an open and free environment, particularly for female students in most developing countries	Female students from Mauritania explained that browsing the Internet was like exploring an open world, and allowed them to escape their closed communities

Technology motivates students and energises classrooms	Integrating ICT methods in education encouraged students and teachers to work effectively to shift to a non-traditional learning environment	Teachers who participated in the World Link Program from Pure pointed out that using computers and the Internet in education enabled them to develop new educational techniques
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Larson and Murray (2008) indicated to some initiative of blended learning in Middle East such as the Learning International Networks Consortium (LINC) this initiative was to be implemented in developing countries. The members of this consortium propose three broad, important messages for educational technology in developing countries. First, open educational resources should be accessible to learners and isolated schools via web-based technology. Second, a blended learning model should be developed and implemented with traditional learning styles, as this is more convenient for students and teachers. Finally, it is important to reach learners who do not have Internet access, and learn in isolated schools using web-based and other multimedia methods such as DVDs and CDs. Various recommendations were made to promote and encourage blended e-learning into developing country educational systems: especially utilising blended learning processes and providing teachers with training programmes to improve their pedagogical skills.

3.9 Education in light of e-learning

E-learning has positive influences on learners and educational outputs, particularly digital and computer skills that increase self-efficacy and improve student performance (Lie, 2007). Clearly, students' computer and Internet-related skills are essential for e-learning and can heavily impact student learning activities. E-learning environments, relying on innovative tools, can assist learners in developing their interactive and communication, creativity and critical thinking skills (Dodd, 2004) which occupy the six highest levels of Bloom's Revised Taxonomy's of student knowledge-building, including: remembering, understanding, applying, analysing, evaluating and creating (Dodd, 2004).

According to Robert (2006), using computers, the Internet, and self-based study in an e-learning environment develops and increases learner interactions and communication skills. Hill (2008) also

pointed out that ICT infrastructure, computer facilities, and web-based instruction have created new and effective educational environments (e.g. online and distance education) as alternatives to traditional styles. Moreover, e-learning can enrich educational input and output by providing teachers and learners with communication and computer skills to learn effectively, either in synchronous or asynchronous environments (Holmes and Gardner, 2006).

At the organisational level, e-learning can empower educational institutions. According to Conole *et al.* (2007) e-learning changes the roles in education. Krause *et al.* (2009) found that e-learning environments enable students to become more confident and learn in self-regulated ways. Educational organisations can also adopt e-learning in order to reduce costs of maintaining certain programmes where a small number of students are enrolled.

Therefore, education systems, in both developed and developing countries including Gulf States, are increasingly adopting e-learning online courses (Yigitcanlar and Baum, 2009; UN, 2003). However, it is obvious that the quality of e-learning determines its success in supporting and improving curricula, pedagogy and learners' achievement (Sorensen and Takle, 2002; Chiu *et al.*, 2005). Kim and Bongn (2002) stressed the need to evaluate e-learning quality, in terms of differences among learners, educational organisations, cultural backgrounds, learning processing patterns and environments. Behnam (2012) urged that e-learning can be used effectively to augment the quality of education in various ways; however, it is vital that the use and purpose of ICT integration with educational must be educationally-driven (Talebian *et al.*, 2014).

While the numbers adopting e-learning have exponentially increased over the last two decades, a large proportion of students still prefer traditional methods (Hrastinski, 2008). This is due to the high level of systematic and structured interactions and communications that promote learning in this system. Students feel more motivated and are more satisfied in a sociable environment due to the mechanism and interaction between learners and the learning process, irrespective of the subject. Social interaction between teachers is also a way to model collaboration. Traditional teacher-centred methods do not provide a platform whereby brainstorming and sharing ideas contribute to the growth of the process.

The system is also set up to monitor the involvement, personal development and periodical academic progress of each learner. The traditional method allows students to build a peer network that, at a later stage, may develop into a powerful, effective professional network. It is therefore envisaged that if the asynchronous mode of e-learning could incorporate an element of community of practice, the number of students opting for that mode of learning would increase significantly.

3.10 Synchronous and Asynchronous e-learning

Information and communication technologies can enrich and build firm and useful virtual communication for educational purposes (George and Hotte, 2003). Asynchronous and synchronous e-learning are both used in education. The rapid developments in information and communication technologies have paved the way for various types and models of learning to occur in both e-learning environments. Obviously, synchronous and asynchronous e-learning methods support different purposes in educational contexts (Hrastinski, 2008). In synchronous e-learning, communication technologies play a critical role in connecting students and teachers as they replace the face-to-face interaction in traditional settings where students and teachers have direct contacts.

In addition, this type of learning is considered as student-directed learning (Wang, 2003). However, traditional learning processes in countries such as Saudi Arabia depend on the teacher being the main director of the process. E-learning provides great opportunities for students to achieve their objectives with less effort and at flexible times according to their circumstances (Brindley *et al*, 2009). Yet any type of e-learning, including asynchronous, requires at least a basic knowledge of computer and Internet usage.

3.10.1 Asynchronous interactions for education

Online student practice is recognised as the most important aspect of this form of e-learning. Asynchronous communication tools, according to Karsenti (2007), can enhance learning by increasing the possibilities for students to focus on the course content. Considerable research has been carried out to explore how students participate and collaborate in asynchronous e-learning

environments (Peters and Hewitt, 2010; Murphy, 2004; Luckin, 2003). Students' activities and interactions within asynchronous discussions are critical issues in terms of their educational and pedagogical effects on e-learning environments. Peter and Hewitt (2010) identified various students' practices online, including reading large numbers of text-based messages, writing long replies to them, skimming, selecting relevant messages, and ignoring what they already knew, which are all due to the very nature of self-directed study, which itself relies partly on self-assessment as to the way individual students perceive their existing knowledge and the best way to absorb and understand new reading materials.

As there are increasing numbers of courses offered through asynchronous e-learning, the study of this evolving method is important. In asynchronous environments, according to Amhag and Jakobsson (2009), students and teachers interact through conversations or text-based messages to achieve educational goals. Students mainly depend on each other to develop their thoughts, ideas and understanding of course contents. However, collaborative skills should not be viewed as techniques belonging to every participant; but rather, to be developed during the course.

In higher education, where the asynchronous environment is more developed, student knowledge construction relies on interaction and exchange between participants (Schellens and Valcke, 2006). Interestingly, Solimeno *et al.* (2008) reported that students who were less friendly and did not want to interact with their friends preferred face-to-face collaborative environments which were not time consuming, whereas in an asynchronous environment, they were given significant opportunities to communicate with their friends for a longer time and with less intensity.

Asynchronous e-learning environments can include various techniques for engaging students. Hew and Cheung (2008) examined seven facilitation techniques used to attract and engage students in asynchronous discussions, including: giving opinions or experiences, questioning, showing appreciation, establishing ground rules, suggesting new directions, summarising, and personally inviting people to contribute. However, providing personal opinions and questioning were found to be the two most effective techniques.

In asynchronous e-learning, students are self-directed, an activity which has to be taken into account when designing for and implementing e-learning projects in such environments. Students are expected to master basic computer skills in order to be able to operate and benefit from this environment. In this environment students can exchange their ideas and teach each other, either individually or in groups (Kosba *et al.*, 2007).

A great deal of research has explored and analysed student and teacher behaviour in online learning environments (Harasim and Yung, 1993; Berge and Collins 1996; Draves, 2000; Young, 2004). This large body of research indicates that teachers and students behave equally, with learning and teaching activities achieved due to collaboration and more informal practices between them. Students become more active participants through online discussion compared with face-to-face learning situations. And this underlines the importance of teacher role in this environment. Providing teacher training in communication technology with e-learning facilitating skills would be more effective in assisting teachers to maximise the benefits of asynchronous environments for students, and become more effective in online tutoring.

According to Halvey *et al.* (2010), collaboration amongst groups of Internet users in an asynchronous, remote environment has been widely implemented by multimedia tools in educational and research applications. These tools allow users to complete their tasks quickly and efficiently, saving much effort and time. Amhag and Jakobsson (2009) report that in a web-based course, collaborative learning tools can enhance students' abilities to learn via asynchronous discussions.

Due to its nature, interaction in e-learning is vital. Bhowmick *et al.* (2007) suggest that a system which does not consider student interaction and satisfaction might not support or generate efficient e-learning environments. Therefore, they emphasise the importance of integrating multimedia tools in order to create effective and interactive learning environment. Moreover, the variety of resources in e-learning courses can effectively support students' interaction (Collis and Moonen, 2001; Schoonenboom, 2008). Thus, asynchronous e-learning can be a powerful method in education when used effectively. However, the role of teachers in such context is extremely

critical as they are the ones who can decide how this tool is implemented and utilised (how and when).

3.10.2 The role of teachers in asynchronous e-learning

In asynchronous online discussions, the teacher has a clear, significant impact on student learning and communication (Ryan and Scott, 2008; Vonderwell, 2003; Jung, 2001). The effort students make to learn in asynchronous environments is certainly influenced by the way in which teachers set tasks such as assignments, essays and online discussions (Schallert and Reed, 2003). Kosba *et al.* (2007) state that although students in an asynchronous learning environment express and communicate freely and independently, teacher intervention is necessary in coursework to assist, advise, and guide students on regular course content. Therefore, advanced preparation to provide teachers with essential educational and pedagogical principles of asynchronous and synchronous learning styles is recommended to meet student needs in e-learning environments (Koc *et al.*, 2009).

In online asynchronous environments, better facilitators and instructors lead to greater potential outputs among students. During asynchronous e-learning processes, computer-mediated communication and instructors assist and promote students' ability to think critically and solve problems (Mandernach *et al.*, 2007; Romiszowski and Mason, 2004). Interactive asynchronous e-learning, through discussion, posting and responding to messages, is viewed as the most striking, effective factor in e-learning success (Jeong, 2003). Yap and Chia (2010) also stressed that in an asynchronous discussion, students need to be supervised and monitored by instructors and facilitators to increase their knowledge constructions.

In addition, the relationship between students and teachers is of paramount importance. Crucially, Offir *et al.* (2008) argue that the online interaction between students and teachers, whether synchronous or asynchronous, is the major factor impacting student satisfaction and achievement. The instructor can play an essential role in an online asynchronous discussion, particularly in interactional coherent elements, which involves directing and manipulating discussions by adding comments, feedback and sending messages as responses to student contributions (Potter, 2008). Therefore, Armstrong (2008) stressed the importance of providing teachers with the skill to

manage and direct virtual discussions. Huang (2002) argues that in e-learning, the instructor plays an important role in managing learners' communication and objectives, so that the interaction between learners and between the learner and instructor depends on the latter's role as motivator and advisor.

The social interaction and collaborative environment is also heavily influenced by an adept instructor. Wise *et al.* (2006) highlight the instructor's role as vital in accomplishing the processes' goals, because instructors responsible for accommodating, facilitating and supporting learning outputs act as moderators. Rockwood (1995) identified another major role for online teachers, which is to empower and enrich interaction among groups of students. Wilson (2004) designed ExamNet software to examine student responses to the creation and refining of exam questions in an asynchronous learning network. He recommended that instructors supervise student activities and structure a learning competition by encouraging them to post, comment and edit other students' questions. This could be achieved by giving students participation credits. Ho and Swan (2007) evaluated online conversation on an English course and found that the instructor played the most important role in developing students' writing styles, including correcting spelling, grammar mistakes, punctuation and other aspects.

An *et al.*, (2009) stressed that student interaction and communication were affected by instructor guides; for example, students were more effective in posting, commenting and sending messages to their friends when the instructor required them to provide feedback to their friends - but when not required to do so, they were shy and less interactive. Instructor interventions are necessary for more student interaction. Palloff and Pratt (2003) pointed that instructor intervention may affect the sense of community among learners; thus it should not prevent students from taking responsibility for sustaining their own learning process and participating interactively.

Student knowledge construction during asynchronous online discussions was examined by Koh *et al* (2010). Knowledge construction was defined as the process by which students exchange with their course friends, instructors and peers, to address and develop new ideas in order to solve learning problems. Higher levels of knowledge construction reflect a successful exchange

environment among learning groups. The study indicates that online projected learning enables students to develop advanced levels of knowledge construction, particularly when effective instructors and up-to-date facilities are provided. Indeed, knowledge construction in educational online environments requires students to have cognitive and social problem-solving skills (Tsai, 2009). So, using state of the art facilities, along with skilled and motivated instructors, play a huge role in contributing to learning and development of e-learning.

3.11 Forums in teaching and learning

Synchronous and asynchronous communication tools have gained increasing attention by educators aiming to facilitate collaboration, and ultimately improve educational outcomes. Several tools - forums, chat, email, blogs and other computer-mediated communication tools - develop learners' capabilities to discuss and obtain a sense of community, either with each other or with instructors (Garrison *et al.*, 2001). In addition, a variety of tools are used in order to facilitate and promote student interactions in e-learning environments and to help educators to address students' needs (George and Hotte, 2003). However, forums, according to Hrastinski (2008), have taken the lead among asynchronous communication tools. And the most important aspect of forums or electronic discussion groups is that they encourage asynchronous collaboration.

Scardamalia and Bereiter (1999) developed a collaborative database called 'Knowledge Forum', in which learners can research problems, collect information and collaborate to build their knowledge. The learner can post, communicate with other learners, and participate in online groups. It was clear that students tended to reconstruct what they read from learning sources and hear from their peers, which have a profound impact on their development of ideas and knowledge.

Combining various technologies and analysis techniques and tools can increase and deepen the benefits from forums in education. For instance, Dringus and Ellis (2005) combined both data mining techniques, aiming to examine databases to identify unknown patterns and interrelationships, with the assessment of asynchronous discussion forums in order to monitor

student learning and development progress. This approach enabled instructors to explore and view various data from the forum.

3.12 Benefits and limitations of E-learning

Flexibility, along with remote, and self-centred learning, are mentioned as positive aspects of e-learning (Abrami *et al.*, 2008; James, 2002). E-learning can also enhance group collaboration whereby learners and teachers can stay connected through a wide variety of tools (Allahi and Sanayei, 2009). As the new era is all about speed and technology, e-learning perfectly caters to the needs of students. It provides information regarding lectures and assignments at a much faster pace than the traditional teacher-centred methods of teaching. Students can ask questions from teachers in a more convenient manner and get feedback from the teachers at a much faster rate (Harasim, 2012). Additionally, e-learning can help in the building of highly resourceful and limitless digital libraries that can be accessed anytime by anyone (Hill, 2008; Karimi, 2007) which makes new learning experiences and opportunities possible (Holmes and Gardner, 2006).

Furthermore, e-learning showcases the utilisation of ICT and web-based tools in order to empower remote learners (Zhang *et al.*, 2004). As students can learn at any time, they can access rich electronic information in order to further expand knowledge acquired in the classroom (Edmundson, 2007). In addition, according to Mandinach (2005), e-learning is considered a bridge between ICT and educational processes. Govindasamy (2002) indicates that e-learning is a means that helps us to solve authentic learning problems and enhance performance through delivering educational material anytime and anywhere.

E-learning is mentioned for its benefits for facilitating students' higher order thinking skills. Woollard (2011) indicated that with the help of e-learning tools, new learning and thinking skills are incorporated which encourages different learning styles. Additionally, e-learning supports teaching methods which emphasise critical thinking and students' engagement, as it uses interactive technologies and encourages more student-centred learning approaches (Carr, 2009; Liu, 2005). Also it creates a more interactive environment for students. Since it is considered that

the visual learning style is presumed to be the most effective mechanism for learning, the visual and graphical environment of e-learning makes the content more memorable and interesting. Students are also most likely to engage in such activities that tend to retain their focus (Zhang, 2005).

Furthermore, one of the main advantages of e-learning is efficiency provided at a low cost. As e-learning makes learning more convenient and fast, the costs of training are reduced drastically. Through e-learning, students do not have to travel to attend seminars and lectures and thus helps in saving the travelling cost (Anderson, 2008).

On the other hand, despite many advantages for adopting E-learning, there are still some concerns. Hamid *et al* (2011) pointed to concerns associated with e-learning, such as time management issues, lack of ICT skills, and limited technical infrastructure in some higher learning institutions. It cannot be denied that e-learning is highly dependent on technology, and in case of network problems or power breakdowns the whole system can collapse. Also, it requires the bandwidth frequency to be similar among all the students and teachers, otherwise video and audio can be ruptured and difficult to comprehend. Therefore it is necessary that the technological infrastructure of the institute should be well-maintained and able to handle any technological mishap (Sánchez and Salinas, 2008).

In addition, copyright issues are also mentioned as a concern (Waycott *et al*, 2013). Furthermore, unlike traditional education, authentic human interaction between students and teachers can impact learning (Behnam, 2012). Also in classroom learning students get to interact with other students and discuss problems among themselves, a social aspect that helps in understanding the lectures. By reducing the classroom component, a feeling of isolation can arise among students as they are unable to interact and discuss their problems and therefore be left feeling that they might be the only one facing them. However, this concern can be overcome with the power of advanced technologies like video conferencing and other interactive methods (Yadegarzadeh and Rahimi, 2002). Also the formation of online communities is becoming an increasing phenomenon as students on similar courses or other institutes are joining particular communities that address

their issues, and helps them engage with their fellow students. However, it is often discussed that due to these online communities, students withdraw from the real world (Selwyn, 2014).

Although, according to Haythornthwaite (2004), computer-mediated communication within e-learning might be unsuitable or inappropriate for 'rich' communications as this type of communication does not convey the full range of communication cues, such as voice tone, body language, and dress.

In addition, e-learning still represents a major challenge for basic ICT users. Liu (2006) described online education as a new phenomenon. His studies also showed that global-scale education has significantly increased through online systems. For example, students and employees who need to travel regularly can attend virtual classes and global training programmes, as well as access international educational curricula via the Internet.

In addition, accessing the internet exposes students to vast amounts of information, which might be not scientifically confirmed and erroneous (Hodavand, 2008). Further concerns have been expressed in terms of delays in assessment and feedback in e-learning which might reduce its value and relevance for students (James, 2002) and the cost of technology needed for e-learning systems to operate effectively (Woollard, 2011). Moreover, scarce resources and high rates of ICT illiteracy among young people in many developing nations and areas can limit the benefits offered through e-learning (Hafkin, 2002). Edmundson (2007) also pointed to the patriarchal nature of many traditional societies in developing countries which might exclude certain groups or categories, particularly females, from benefiting from e-learning.

According to Mayes and Freitas (2013), there are no models of e-learning *per se*; rather, e-learning is considered as 'e-enhancements' of learning models. Therefore, it is important to be clear about the added value of the 'e' to learning contexts when implementing e-learning. However, e-learning is mentioned as an approach through which learning can benefit from new technologies to enhance collaboration among students and teachers as well as an effective way of delivering contents and resources. Therefore, according to Selwyn (2014), online learning should not be

conceived as a solution for educational issues; instead, he stresses the potentials of blended approach, which combines self-paced learning, live e-learning, and face-to-face classroom learning. Table 3.2 maps the advantages and challenges related to e-learning.

Table 3.2 the definitions, advantages and challenges of e-learning

Author	E-learning	E-learning advantages	E-learning challenges
Woollard (2011)	*Teaching, tutoring and learning based on integrating digital resources (e.g. ICT, multimedia and web-based systems).	*New learning and thinking skills are incorporated. *Virtual e-learning processes are possible. *Online understanding, analysis and evaluation are possible.	*Specific types of learners. *Computer and Internet skills are required.
Hill (2008)	*ICT's components to support effective teaching and learning processes.	*More accessible given unfixed times and/or locations. *Different learning styles can be met. *Learning materials can be quickly and easily delivered.	*Depends on learner backgrounds and their level of computer skills.
Holmes and Gardner (2006)	*Online access to learning materials and resources anywhere and anytime.	*New and flexible learning environments are available. *New learning experiences and opportunities are possible. *Learners can develop their ICT skills.	*Lack of online accessibility for all learners. *ICTs are not integrated into the school curriculum.
Rosen (2009)	*Learners obtain resources via an either synchronous or asynchronous environment.	*Facilitated learning by integrating the web and ICT resources into teaching and learning.	*More costly for learners *Advanced ICT tools for learners and providers.
Edmundson (2007)	*Developed based on integrating information technology into the local or global environment.	*Self-creative learning and efficacy *Developing learner abilities *High level of educational performance and global knowledge.	*Establishing ICT and digital educational environment. *Learners' cultural background in most developing nations based on traditional learning.
Peñalvo (2008)	*Teaching and learning process aims to obtain knowledge and skills using web-technologies.	*Virtual and distance learning are available. *Developing skills and obtaining knowledge superior to traditional ways of learning.	*Successful and high quality e-learning requires specific conditions (digital resources, technology and knowledge of information technology).
Wellington (2006)	*Involves the use of ICT and electronic media in the learning process.	*Accessibility and reusable materials. *Reduced costs and powerful ICT methods.	*Computer experiences are needed for teachers and students. *Financial resources and

Author	E-learning	E-learning advantages	E-learning challenges
		*Highly motivated students. *Unfixed times and places.	adaptive educational policies.

3.13 E-learning in Saudi Arabia

Over the last three decades, integrating e-learning in the schools and universities of Saudi Arabia has grown rapidly (Al-Sulaimani, 2010). This is due to policy development of the Saudi education system, in which ICT plays an increasingly important role. The Saudi government has focused on developing and improving new and effective educational curricula that depend on computer and web-based techniques. In addition to nurturing teacher and student skills, the government has started to pay attention to the importance of a diversity of methods in the learning process. By linking these advanced methods to pedagogy, this contributes to the planning of the educational system and its outcomes (AlShammeri, 2007).

AlabdelKereem (2009) studied the progress of e-learning in Saudi schools. Digital libraries and online courses have been established, creating a virtual community for learning which integrates learners and teachers with educational organisations. E-learning entails improving computer knowledge in students, and developing pedagogies to increase flexibility of learning processes via synchronous or asynchronous e-learning styles. The study included a survey of a group of students in Al Bayan Schools, Jeddah. E-learning methods were accepted by females aged between 15 and 18, particularly when there was advanced ICT infrastructure as well as adequate web-based systems in the schools. The participants in AlabdelKereem's 2009 research agreed to study in e-learning context scientific modules (chemistry and physics) and social and language modules (geography, history, and grammar). However, students found it difficult to submit their assignments on CD or in electronic format. Their parents' computer illiteracy was a major challenge to some students' choosing educational modules based on e-learning programmes, because parents usually closely follow their children's educational progress. Other barriers

included the absence of technical instructors in computer labs in many schools, and students spending long sessions in front of computers individually, which negatively impacted upon social communication.

AlShammeri (2007) looked at the effectiveness of blended learning in a Geography module at secondary schools in Hafer El Baten in Saudi Arabia. The study investigated whether those who studied the module felt positively about blended learning tools. 64 students from the third year, aged 14 or 15, participated. Students were divided into groups: an empirical group (those who studied the Geography module in an e-learning context); and a control group (those who studied Geography in traditional teacher-centred methods). The findings indicated a statistically significant difference between the two groups, whereby those in the empirical group felt more positively towards learning than the others. The study had important implications, such as the effective role of teacher and instructor training in promoting blended e-learning in Saudi schools.

It was clear that teaching Geography with ICT tools, as part of a blended e-learning programme, had a positive influence on students' attitudes and their educational outcomes. Nevertheless, AlShammeri (2007) suggests that in educational policies, more attention needs to be paid to establishing an effective ICT infrastructure, with better trained technicians who are able to support successful e-learning modules. Further research is needed, especially to investigate and analyse the efficacy of blended e-learning on student motivation, collaboration and creativity. AlShammeri's study was conducted in a developing country context and generally in a culturally and politically segregated country, so such findings may be inconclusive and may not be an accurate reflection of other developing countries.

It can be concluded that there has been considerable progress in incorporating synchronous and asynchronous blended e-learning in Saudi schools, universities and educational institutions. However, few studies have been published on the efficacy of e-learning on educational approaches, pedagogy and student attitudes in the Saudi community. The dearth of research in the effectiveness of the correct mixture of blended e-learning with the existing pedagogy

continues to pose a problem in convincing educational establishments, as well as some governments, in adopting e-learning as complementary to the existing pedagogy.

3.13.1 Development of asynchronous e-learning in Saudi Arabia

In Saudi Arabia, educational policies have been developed to incorporate new learning strategies that rely on computers (Al-Asmary, 2007). In the development and expansion of the Internet, multimedia and computer technology have promoted and facilitated the utilisation of asynchronous e-learning in Saudi Arabia. Furthermore, a comprehensive plan has been developed aiming to change traditional teacher-centred methods of education and preparing teachers through training projects in order to promote the integration of technology in education in general and the utilisation of powerful asynchronous tools in particular.

Alebaikan and Troudi (2010) investigated the effectiveness of asynchronous online discussion in blended courses in Saudi universities. Nine undergraduate female students from the College of Applied Studies and Community Services and three female instructors of different courses, all of whom were enrolled in blended learning courses, were interviewed. A qualitative methodology was utilised based on a combination of a constructivist and social constructionist theoretical framework. The aim was to determine all social and cultural factors impacting the e-learning environment.

The findings showed that various issues directly impact the process, including e-pedagogy, plagiarism, infrastructure, LMS system tools and time demands. Saudi instructors had limited experience in pedagogical and technological factors, which certainly affected the quality of online discussion outputs. Consequently, this required that e-pedagogy became part of the teaching process.

The LMS infrastructure was limited due to various aspects that caused problems for both students and instructors, such as the feature that allowed instructors to know who was online. Dealing with large numbers of participants required easy and user-friendly features, yet students encountered

technical problems when logging in and out. E-plagiarism was experienced as a serious problem and had not been considered in the blended course. Students could take ideas, text or graphs from Internet web pages without referring to sources.

New policies are therefore required to guide students in regard to this, and workshops should provide a basis for the development of writing skills. Finally, instructors reported limited time in which to supervise, manage, and provide feedback to participants. Workshops that focus on time management should be run for teachers and instructors for future use. This study also highlighted the limitation and implication of further research and anomalies in findings. For example, it is unclear from the findings whether the lack of feedback was down to lack of motivation or, was used as time saving device.

Further development could lead to a successful learning process for educational organisations. However, student interaction and satisfaction should be carefully addressed when programmes are designed in order to foster an attractive learning environment. Student contributions could be positively affected through participation in asynchronous online discussions. Posting and responding to messages, at set times, can encourage effectiveness, while online discussions can offer collaborative learning and the sharing of experiences and skills (Alenezi, 2012).

3.14 Conclusion

This chapter began by exploring e-learning concepts from different perspectives; specifically, definitions associated with education and pedagogy. This study suggests that e-learning is a digital frame in which teaching and learning are constructed according to computer and web-based methods. In traditional teacher-centred methods of learning, the main target is to develop learners' thinking skills, so they are able to understand, analyse and evaluate learning materials. In e-learning, however, it is expected that the learner already has an acceptable level of ICT experience and knowledge before beginning their learning.

Asynchronous e-learning styles were described and compared with traditional models. Computing and Internet skills are important requirements for learners to achieve learning tasks and objectives successfully. Thus, the relationship between technology and pedagogy was highlighted, whereby Internet and ICT accessibility are essential in promoting online learning. After this review of the literature, the research methodology will be presented and justified in the following chapter.

Chapter 4: Research Methodology

4.1 Introduction

The aim of this research is to bring a deeper understanding of the use of an online forum and identify the learner based issues associated with its use, at one of schools in Boraydah, Alqassim, Saudi Arabia. This chapter identifies the research paradigm, research design, research methods and analysis employed in the study. A constructivist and interpretivist paradigm using qualitative data methods is proposed.

This chapter begins by providing an overview of the research process and then identifies the context of learning the Geography curriculum in the context of a classroom in Saudi Arabia. Then it sets out the research aims, objectives, and questions, followed by the philosophical standpoints, theoretical perspectives, and methodology utilised in this study including design, research methods, and the structure of the research tool. The chapter concludes by discussing the data collection methods used, which includes sampling, ethical considerations, and research instruments. Practical procedures in data collection are addressed. While the methods are described in this chapter, the data analysis is discussed in the following chapter after the data collection discussion is completed.

4.2 Overview of the Study

The current study commenced in June 2010 and has progressed through several different stages: a pre-study period in which the project was prepared; undertaking a review of the literature and identifying the research problem; forming specific research objectives questions and appropriate research methods; conducting a feasibility study; collecting data for the study; analysing, reporting and discussing findings; and writing up and putting the thesis together for submission (see table 4.1).

As the researcher worked as a teacher and educational supervisor at the Saudi Ministry of Education for 10 years, the researcher has assisted in forming awareness of the general direction the research would take and what it would involve. Professional experience was supported by readings about ICT and e-learning methods for the literature review.

In October 2010, the process of formulating research goals and questions had begun. By reading and reflecting on the circumstances, it was possible to formulate more precise questions and develop appropriate research methods. This is a qualitative research study that utilised five focus groups, observation and semi-structured interviews as its methods. After receiving permission from the Ministry of Education in Saudi Arabia, a feasibility study was conducted in December 2011 in order to investigate the application of the forum with the sample group and examine the readiness of the school and students to participate.

The next stage was holding a training session for students, which took place at the end of February 2013. In this phase of the study, an intensive training session was held to introduce the study to the students and train them on using the forum. Following the training, the forum was set up and introduced to the participants for three weeks during the period from 4th March 2013 to 25th March 2013.

After that, the data collection process began, which took around two months between March and May 2013 with observation, focus group and semi-structured interviews. Online observation was conducted by scrutinising and recording the activity of the students on the forum and then by semi-structured interviews and focus groups.

The data analysis process started as soon the forum became active in March-June 2013. The process has three parts:

- Thematic analysis based on coding and developing categories;
- Discourse analysis of the students' online interactions; and
- Learning outcomes analysis using Structure of Observed Learning Outcomes (SOLO taxonomy).

The analysis process identified the extent to which those students participated, communicated, interacted and collaborated using the forum.

Table 4.1: Phases of study

Phase	Activities	Date
Pre-study period	Reading about using ICT and e-learning methods	January 2010 – September 2010
Preliminary stage	Developing research objectives questions and formulating research methods	October 2010 -November 2011
Feasibility study	Investigating the ability to apply the forum with the potential sample and examine readiness of the school and students to participate	December 2011
Training session	One week training session (one hour per day) to introduce the study to the students and train them on using the Forum.	February 2013
Forum development	The forum was set up and was applied on the participants	4th-25th March 2013
Online-observation	Online observation was conducted through applying the forum on students	4th-24th March 2013.
Data collection	Using three methods: observation, focus group and semi-structured interviews	March 2013 - May 2013
Analysing data	process begun with data obtained from interviews (semi-structured and focus group) where it was coded around key categories of themes and again the responses were aggregated	March 2013 - June 2013
Reporting	writing findings as appeared in the three themes and observation	July 2013 – December 2013
	revised report	March 2015 – March 2016

4.3 The national Geography curriculum in Saudi Arabia

The Geography curriculum in Saudi secondary schools consists of four units that aim to provide female students (aged 17-18) with comprehensive and diverse sources of knowledge about the geography of the world, consisting of physical and human topics and subjects that reflect the regional and international characteristics of the world. Students learn in two semesters, with two units per semester. The textbook is considered the main source of information, and the teachers follow traditional teaching styles that include face-to-face demonstrations and explaining the context of each lesson (Yahya, 2002). It is worth noting that this curriculum is applied in all Saudi schools, both male and female, and studied by all students. Traditional tools such as blackboards and plastic maps are used by teachers to explain lessons and discuss ideas. In addition, the teachers draw charts and create tables on the board to present the subject. The lessons are teacher-centred; teachers use a simple and straightforward technique that depends on asking students geographic questions to evaluate their responses. In some cases, teachers tend to use a range of simple pieces of equipment (e.g. atlases and photographs) to describe a range of physical and human features.

Apart from the lack of ICT methods for teaching and learning the Geography curriculum, the absence of field trips for girls until recently (Aawsat, 2005, al-Hayat, 2014) is considered another drawback and disadvantage of the current educational practice and policy in Saudi secondary Schools. The absence of using ICT in schools in general and in teaching geography is clear (Alsahli, 2012). It is worth noting that most of students have internet access at home and on their smart phones (more than 50% of population (Ipsos, 2013)). All students in this study had access to the internet at home.

Student assignments and homework are undertaken individually, as a group of questions are included at the end of each subject in the unit. Some questions can be answered in the book and depend on choosing the correct answer or completing the sentences, while other questions requiring investigating, analysing and drawing need to be answered in a notebook or answer sheet. There are no electronic materials such as DVDs, CDs, or PowerPoint™ presentations.

Thus, teachers monitor students' progress weekly by marking the answers of these questions, giving grades for answering a teacher's questions and passing final monthly written exams. By the end of the first semester, the first two units need to be completed and then the final exam for that semester will be held. Two main exams are held, one before the half term and another by the end of the year. Student grades are distributed as weekly activities (10%), monthly exams (10%) and two semester exams (80%). Exam questions are determined based on the context of book units and lessons, and exam questions may require students to draw maps, make comparisons, describe landscape features, and answer cause and effect questions.

4.4 Objectives and questions of the study

The aim of this study was to bring a better understanding of the use of an online forum and identify the learner-based issues associated with its use at a secondary School in Boraydah, Alqassim, Saudi Arabia. Based on a careful review of the literature (see Chapter Three), this research seeks to achieve the following objectives:

4.4.1 Research objectives

- To investigate the perceptions of the students with regard to current classroom sessions and pedagogy.
- Analyse the methods and strategies by which the online forum can be integrated with the current traditional teacher-centred curriculum.
- Assess the benefits and challenges of implementing an online forum taking into account the contemporary pedagogy and the experience of students.
- Examine detail and study different ways in which the online forum is integrated into the curriculum and pedagogy through the lens of communities of practice.

4.4.2 Research questions

This research is designed to answer the following questions, which were derived from reviewing the literature and are based on the stated objectives:

What are students' perceptions of their current classroom experiences?

- Generally
- In relation to interaction and communication
- In relation to knowledge

What are students' perceptions of the online forum intervention?

- Generally
- In relation to interaction and communication
- In relation to knowledge

How do students react in the online forum?

- How much is the forum used?
- What is the forum used for?
- How does the forum develop features associated with Communities of Practice?

4.5 Research paradigm

The need to examine a researcher's philosophical standpoint, which is also important in understanding the data, became vital as this study took shape. Philosophical considerations influence the way that the researcher interprets and understands the data that emerges (Newby, 2009). As social research views human characteristics as complex and unique, interactions between human beings as well as their attitudes and opinions should be studied in depth (Neuman, 2006).

It is therefore important to introduce the two major branches of philosophy: ontology and epistemology. Ontology is more concerned with our assumptions and claims about the truth and whether the truth is subjective or objective (Morgan and Smircich, 1980); it is more concerned with the nature of reality and the evidence of this reality (Maykut *et al.*, 1994). Reality in this research is subjective, as it represents the perception of every participant as a separate reality. On the other hand, objectivity sees reality in complex ways, and from different perceptions such as feelings (Potter, 1996).

In contrast to ontology, epistemology is more concerned with the knowledge and methods required to achieve the knowledge (Hofer and Pintrich, 1997). Blaikie (1993) defines epistemology as *'the possible ways of gaining knowledge of social reality, whatever it is understood to be. In short, claims about how what is assumed to exist can be known'* (p.3). Epistemology consists of three main positions: objectivism, subjectivism and constructivism (Crotty, 1998). In objectivism, knowledge exists whether human beings are aware of it or not. While subjectivity sees that human behaviour can be studied and understood by realising others on their own terms, constructivism is more concerned with how human beings learn based on observations and scientific study. Constructivism also argues that neither reality nor knowledge has an objective or absolute value. Concepts of social reality are therefore part of the specific context where social phenomena develop (Crotty, 1998).

In the context of this study, constructivism seems to be the most appropriate position, as it explores the manner in which learners interact and communicate with each other. In addition, this study has no hypothesis or assumptions to examine, and is concerned with how technology can facilitate learning (by developing the forum). Furthermore, since this research is concerned with participant perceptions, the constructivist approach seems more appropriate than the positivist paradigm. Moreover, as this study deals with complex issues such as participants' perceptions and what these mean, constructivism allows the researcher to respond effectively to this complexity, which would not be possible with traditional statistical techniques (Gummesson, 2006).

Generally, there are two primary approaches to social research: positivism and interpretivism (Lin, 1998). Positivism rejects invisible factors and constructs knowledge as fact, or as absolute objects that can be observed and experienced (Robson, 2002). For positivists, *'there is a straightforward relationship between the world (objects, events, phenomena) and our perception, and understanding, of it'* (Wilig, 2001, p.3). Hunt (1991) stated that *'the positivist paradigm asserts that real events can be observed empirically and explained with logical analysis'* (p.33). Thus, positivism concentrates more on human behaviour than on an individual's perceptions, beliefs, and values. Robson (2002) indicates that explanations for studied events can be provided by linking general laws to events and observations. From a positivistic viewpoint, external factors such as social pressure affect human behaviour, and shape all actions and behaviours (see Neuman, 2006). As this study aims to present a deeper understanding of participant comprehension of and interaction with a newly-designed tool, traditional positivism paradigms fall short of this aim.

In contrast, interpretivism suggests that human behaviour is derived from an individual's own interests, and more importantly from her or his understanding of her or his own environment (Robson, 2002). Moreover, the main aim for researchers who use interpretivism is to develop an understanding of how people construct meaning in their own natural context (Neuman, 2006). Thus, reality can be achieved through the participants' eyes, whereas interpretivism sees reality to be that which human beings think or believe it to be (Robson, 2002). By using interpretivism, the researcher assumes that knowledge is multifactorial, depending on observations as well as concealed entities such as values and beliefs (Cohen *et al.*, 2007).

Managing relationships with others and engaging students' views can be achieved through questionnaires, but cannot be understood meaningfully through the traditional positivist paradigm. By using this approach, an epistemological foundation based on an interpretive paradigm, it is assumed in this research that there is more than one reality (Denzin and Lincoln, 1998). As the participants create their own realities and meanings, the researcher needs to understand their point of view and interpret these experiences through their academic experiences (Hatch and Cunliffe, 2006).

In the current study, in which the aim was have a deeper understanding of participants about their experience of their classroom and the tool, the researcher constructed the various realities experienced by participants through observation, semi-structured interviews, and a focus group where students communicated and interacted, using community of practice as a theoretical framework; i.e., focusing on the sharing of interest, concerns and difficulties, deepening knowledge and interacting on an ongoing basis (Wenger et al., 2004). The communication and interaction through the tool eventually created realities experienced by the participants, affecting the participants' knowledge and assisted in enabling a deeper understanding of the students' experience inside and outside the classroom and how it was reflected in building and improving their knowledge. This can be seen through the ability to understand students' experience and sharing it with peers in the class and on the forum and with the researcher.

4.6 Research design

4.6.1 Qualitative research

Research methods can be split into two broad types: quantitative and qualitative. Quantitative research tends to use statistical methods to analyse the data, and is more likely to involve numerical data. Quantitative techniques analyse the elements of phenomena and examine the relationships between factors (McFadzean, 2007). Based on a review of the philosophical stances taken in this research, as well as the research objectives and questions that focus on 'individuals' values' and the '*self-interpretation and representation of their experiences*' (Opie, 2004, p.8), qualitative research methodology was employed.

Qualitative research is '*a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that makes the world visible*' (Denzin and Lincoln, 2000, p.4-5). Denzin and Lincoln (2000) also stated that '*although definitions vary, the aims of qualitative research are generally directed at providing an in-depth and interpreted understanding of the social world, by learning about people's social and material circumstances, their experiences,*

perspectives and histories' (p.5). In addition, qualitative research normally takes place in natural settings that allow the researcher to be closer to their participants, and enhances her or his understanding of her or his interaction and relation with settings (Creswell, 2009). Moreover, although clear associations between interpretivism and qualitative methods are not always necessarily true (Punch, 2009), interpretive research as applied in this study utilises qualitative research methods such as interviews and a focus group that allows the researcher to obtain multiple perspectives (Robson, 2002).

Qualitative methods were chosen as they assisted the researcher to investigate and understand the behaviours, interactions, and experiences of students who participated in the online forum, using it as an asynchronous e-learning environment, to learn part of the Geography curriculum.

4.6.2 Research strategy: case study

This research project employed a single case study strategy. This was deemed most appropriate to achieve the research aims, as this research used an interpretative paradigm utilised in several fields of research, including education (Hammersley *et al.*, 2000). Yin (1994) defines this strategy, as *'an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and contexture are not clearly evident'* (p.13).

Gillham (2000) suggests that understanding the word 'case' is a critical step to understanding the nature of a case study. He assumes that the word 'case' has three main meanings: it is a unit of human activity embedded in the real world; it cannot be removed from its context and it exists in the present time (Gillham, 2000: p. 1).

However, case studies can involve single or multiple cases (Eisenhardt, 1989) that can be selected from real life contexts where obtained raw data should be analysed in a qualitative manner (Dul and Hak, 2007). Bassey (1999) indicated that empirical research utilises data collection as a starting point, as it is unrestricted by the realms of reflective or creative research. Punch (2009)

notes that a case study endeavours to '*understand the case in depth, and in its natural setting, recognising its complexity and its context*' (p.119).

Gerring (2004) explains that the researcher aims to analyse a single unit in order to study a larger class of similar units; the unit could be a person, a group, or even an entire country. Stake (1995) explained '*an innovative program may be a case. All the schools in Sweden can be a case. But a relationship among schools, the reason for innovative teaching, or the policies of school reform are less commonly considered a case*' (p.2).

The case study was chosen particularly as it allows the researcher to explore the data more deeply, and to describe it in more depth. Students were expected to provide different views of their perceptions of their class experience. These views related to more than one of the research questions. This design goes on line with community of practice model and Knowledge Building Theory where it allows the researcher to ensure that any changes in students' communication, interaction and collaboration are a direct result of the forum. There was not any parallel intervention at the same time (see Hammond and Wellington, 2013).

This strategy also allows for primary observation and other research techniques in order to bridge gaps between abstract research and actual practice (Yin, 1994). Moreover, a case study involving research methods such as direct, semi-structured interviews and focus group discussions (Cohen *et al.*, 2007) assists in concentrating on perceptions, feelings, insights, ideas and actions, as heard or observed (Tellis, 1997). It also assists in answering questions such as 'how' or 'why', allowing for a contemporary focus within a real situation (Yin, 1994). It is especially appropriate for this study, as there is no need to control behavioural events in order to answer the research questions.

4.6.2.1 Strengths of the case study

As this research seeks to gain a deeper understanding of participant perceptions, a case study was employed to investigate current student interactions such as verbal and non-verbal communication in the investigating context, thus providing a more truthful image of the situation.

The use of a case study goes in line with the constructivist philosophical underpinnings of the study (Lather, 1992; Robottom and Hart, 1993). This approach allows the researcher to gain better understanding of students' actions while providing their views and stories (Baxter and Jack, 2008). According to Yin (2003), case studies can be used to answer questions of what and why as in the current study or when it is not possible or desired to manipulate the behaviour of participants. In the current study, there were questions that related to the use of case study. For example first and third questions were concerned with answering students' perceptions of their experience and reaction to the use of the forum. In addition, the research questions were strongly related with using a case study strategy. By asking questions about the kind of the case, that will be used in the analysis to achieve better meaning, an effective case study can be appeared and created (Baxter and Jack, 2008; Njie and Asimiran, 2014). Moreover, the current study concentrates on the students' perceptions and experience rather than on the correct information in the forum.

4.6.2.2 Limitations of the case study

A case study strategy has some limitations and one of those limitations is the lack of reliability, validity, and generalisability (Hamel, 1993). This lack of credibility can be linked to bias and the subjectivity of the researcher and others involved in the case. It is worth noting that participants' perceptions are likely to be complex, and the case study strategy is thus the appropriate strategy to analyse this complexity and its meaning brought about by social actors (Stark and Torrance, 2005). Moreover, the researcher took into account the limited studies that used case study strategy in researching using new technology in Saudi Arabia (Al-Wehaibi *et al.*, 2008).

4.6.3 Research methods

As stated earlier, the current study's objectives were informed by Knowledge building Theory and community of practice as theoretical frameworks. Thus, the choosing of research methods was informed by these theories where using observation was used to collect data regarding students' interaction on the forum, while semi-structured interviews and focus group methods were chosen in order to have a deeper understanding of students' experience, community of practice and knowledge before and after using the forum.

As this study took shape and the strategy of a case study was selected, the need for appropriate research methods became vital. Indeed, in the case study strategy, the need for more than one source of data (Yazan, 2015) is crucial to confirm the validity of the process (Tellis, 1997). A case study is considered as a triangulation strategy, which raises the issue of adopting more than one resource (Yin, 1984). In order to investigate the research questions, the researcher aimed to use three main data collection methods: observation; individual semi-structured interviews; and focus groups, respectively, as shown in the (Table 4.2) below. All chosen methods are appropriate, as they assist in providing a deeper understanding of the participants' points of view (Miller and Glassner, 2004). As this research adopted an interpretivist research paradigm, qualitative research methods seemed to be most appropriate techniques with which to gather the data, as they are '*flexible, context sensitive, and largely concerned with understanding complex issues*' (Carcary, 2011, p.11).

Table 4.2 Timeline of data collection

Phase	Methods	Timeframe	Duration
1	Online-observation	March 2013	3 weeks
2	Semi-structured interviews	March- April 2013	4 weeks
3	Focus groups	April 2013 – May 2013	2 weeks
Participants		30 female students	

4.6.3.1 Online-Observation

The observation technique has been widely used in fieldwork (Dewalt and Dewalt, 2002), and is almost always used with other qualitative methods, such as interviews and focus groups. Observation was defined by Marshall and Rossman (1989) as '*the systematic description of events, behaviours, and artefacts in the social setting chosen for study*' (p.79). One of the main benefits of using participant observation is that it allows the researcher to observe the people's activities in a natural setting by observing and participating in those activities (Kawulich, 2005). In addition,

during the observation process, the researcher can remove herself from the setting and carefully focus on interaction. As Dewalt and Dewalt (2002) indicated, observation presents the context for the development of interview guides.

Observation is also important in capturing nonverbal expressions. Indeed, in this research, interaction and communication between students were important for answering the research questions. In addition, interactive learning tasks (activities) given by a teacher can be checked continuously, amongst other things, to determine how much time is spent on them (Schmuck, 1997). Another benefit of using this technique is that it allows the researcher to check the definitions of terms that can be used in the second research method. Schensul *et al.* (1999) indicate that observation is important in creating questions to be addressed to interviewees. Finally, observation is utilised with other qualitative methods to ensure that questions asked of interviewees are suitable for the interviews and the focus group.

Structured observation seemed to be an appropriate choice for the purposes of this study. This method also provided the researcher with a great deal of freedom to directly observe interaction and communication between students on the online forum. As interviewees in both the semi-structured interviews and focus group were able to lead responses to the questions by choosing what to answer, the observation strategy provided the researcher with the ability to observe participants in more naturalistic situations (Mulhall, 2002). Direct observation (researcher presence) was an option considered, but was avoided as it was not a practical choice. The aim of avoiding the researcher's presence was the nature of the forum where students used the online forum by students and there was no need for the researcher's attendance. Specifically, the objectives and questions of the research were not going to be answered properly using direct observation. It was important to give the participants the full freedom to participate without any kind of pressure which was not going to be achieved using direct observation.

In this study, the observations took place during the applying of the research tool (forum). Structure of Observed Learning Outcomes (SOLO taxonomy) was used to observe participants and record their communication, interaction and collaboration. In the observation method, the

researcher used SOLO taxonomy in order to observe whether students' participation on problem solving and explain complex concepts was proper and to what extent those students participated, communicated, interacted and collaborated using the designed forum.

As students used the forum after school, the observation took place online. The researcher determined the objective of the observation, which was observing actions such as: logging onto the forum; interaction; and communication on the forum generally and in relation to the task. The researcher observed the way that students used the forum and their kind of interactions through observing: number students logged in; activity; nature of discussion; technical issues; and suggestions/ how the issues were solved. However, as soon as the data was collected from observation, notes were transferred into a descriptive narrative using a prepared schedule (Kutsche, 1998). This schedule was prepared by the researcher to observe students who logged on, how they communicated and interacted, what activities they undertook and how they responded to technical issues see (table 4.3). The data was captured using two notebooks to be used in interview questions, and another one for field notes (see appendix 1 as an example) (DeMunck and Sobo, 1998). However, this method was used to answer the first two parts of third question.

Table 4.3 Forum online-observation schedules

Date	Group 1	Group 2	Group 3	Group 4	Group 5
Number of student (Logged on)					
Activity					
Nature of discussion (posting, replying, commenting...etc.)					
Technical issues/ how the issues solved					
Suggestions					

4.6.3.2 Semi-structured interviews

Interviews are a widely used method for collecting data from primary sources. Kvale (1996) defines interviews as a qualitative research method used to describe the meaning of a specific phenomenon in the real world of any subject or discipline. Particularly, Kvale (1996, p.1) defines qualitative research interviews as *'attempts to understand the world from the subjects' point of view, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations'*.

Cohen *et al.* (2007) indicate three types of interviews: structured, unstructured, and semi-structured. While structured interviews are inflexible by nature, the researcher usually uses a rigid content and structure in terms of the questions asked. Unstructured interviews are flexible in nature and content, where the researcher has a degree of freedom and adaptability in asking questions. Semi-structured interviews are a mixture of both structured and unstructured interviews where the interview is predetermined. This is advantageous, as the researcher has the opportunity to ask new questions during the interview. In contrast to unstructured interviews, the researcher in semi-structured interviews has an interview guide.

Semi-structured interviews can stand alone as a data collection method used in research (Robson, 2002), and they assist in understanding the message that the interviewee wants to convey. Schallert *et al.* (2003) argued that *'measuring the quality of the e-learning process accurately requires focusing on students' comments and conversation in the interview'* (p. 109). In this current research, it was therefore decided to use this type of interview method, as it is a valuable method for collecting in-depth information concerning participant experiences (McNamara, 1999). It also provides a degree of flexibility where the manner in which the questions are worded can be modified, inappropriate questions can be omitted, and additional questions can be added during the interview process. For example, some interaction between students on the forum questions could be reworded and modified during the interview.

This method is considered as the most suitable technique as, in this study, *'the objective is to explore subjective meanings that respondents ascribe to concepts or events'* (Gray 2009, p.373).

Drever (1995) outlines four main characteristics of semi-structured interviewing: *'a formal encounter on an agreed subject'* with *'main questions set by the interviewer'* to *'create the overall structure'* which *'prompts and probes [to] fill in the structure'* (p. 13).

Semi-structured interviews were used (with focus group technique) to answer the first, second, third part of third research questions:

- What are students' perceptions of their current classroom experience? (i) Generally (ii) in relation to interaction and communication (iii) in relation to knowledge?
- What are students' perceptions of the forum intervention? (i) Generally (ii) in relation to interaction and communication (iii) in relation to knowledge?
- How does the forum develop features associated with Communities of Practice?

The questions were answered through setting 30 individual, semi-structured interviews lasting 30-45 minutes each. This technique was chosen as it provided a flexible method where participants could provide better answers individually about their own experiences and related to personal experience regarding interaction using the forum. Additionally, the potential data was rich, and assisted the researcher in developing more interview questions during the interview about individual experience relating to the learning tasks on the forum; in addition, the data assisted the researcher in developing questions on interaction with peers.

A one week training session for students on the forum was scheduled, following an agreement to do so with students and school administration. Semi-structured interviews were scheduled to take place after the end of the forum in March and April 2013 (four weeks) and so started from 25th march 2013, where a maximum of two interviews were conducted a day. It is worth noting that implementation of the forum was disturbed by a one week 'Spring Break'. Immediate and sequential transcription of the interviews in English took place (Braun and Clark, 2006) to provide feedback and avoid any difficulties during the interviewing process. The school administration provided a tutorial room for conducting the interviews. Interviews were conducted during the tutorial session, which was held three times a week (Saturday, Monday, and Wednesday, between 11:30 AM to 1:00 PM).

Semi-structured interview data transcription and analysis were used in conducting the second part of the study. Specifically, data gained by answering these questions were directed to the questions that were used in the focus group. Additionally, the emerging data assisted in generating new information, questions, and vice versa.

4.6.3.3 Focus group

The focus group research method is broadly used in social science and educational research (Scott and Morrison, 2006), and is considered a 'naturalised method' (Krueger and Casey, 2000). A focus group is a collection of verbal interactions between various groups of participants on a particular theme, initiated by the researcher, and monitored by recording devices (Bloor and Wood, 2006). The advantages of using focus groups are that they are a simple and quick way to gather data from many respondents simultaneously (Kitzinger, 1995). This method has been chosen because it affords the opportunity to explore how students think about the ideas behind the research issues. In addition, in some cases, a new discussion can be commenced when one participant's comments prompt another participant to become involved in the discussion.

On the other hand, there is some bias, as one participant might dominate the discourse, or may influence others' responses. Thus, attitudes, behaviour, and thinking can be identified and measured. Nonetheless, this method is largely used in different fields. Kitzinger (1995) describes how respondents are encouraged to talk to each other and discuss research topics that are useful for analysing technological programmes' influences. A focus group is also considered a useful method in exploring the effect of utilising new technological tools, and examining public understanding (Kitzinger 1995).

It is advantageous to use focus groups when exploring experiences, as each participant might reiterate another's experience. The researcher also has the ability to observe participants' interactions in terms of how they express their beliefs, opinions, and experiences. In addition,

non-verbal communication was observed, and a research assistant facilitated the focus group discussions, as the researcher was the interviewer.

Another advantage of the focus group over other research methods is that it provides accurate data on participants' opinions (Vaughn *et al.*, 1996). In addition, it encourages participants to be open and honest, and more importantly, it puts less pressure on them (Krueger, 1994). Participants who get involved in this kind of discussion are more likely to give examples, which allow the researcher to further the discourse and that was apparent with the focus group discussions after the semi-structured interviews.

The main purpose of using the focus group in this study was to develop a meaningful understanding of students' subjective experience and their interactions. Data collected from the semi-structured interviews was used to supplement this method and gain knowledge by listening to participants as they shared and compared their opinions and experiences. It was anticipated that those who were reluctant due to cultural or social factors (being threatened by revealing their identities), would provide accurate rather than random responses (if their identities were kept anonymous), and thereby avoid negative responses that could possibly have affected the data. Wilkinson (2004) indicates that participants who agree or disagree with others in the group will be able to provide examples to support their views, which will allow the researcher to collect more in-depth data and details. In addition, examples provided by the participants increase the validity of the responses.

Focus group discussions were conducted using a research assistant as a moderator and organiser. The research assistant was a master's degree candidate with experience in conducting focus group discussions. In addition, training and explanations of the research and its objectives were provided by the researcher. The role of the research assistant was to facilitate and organise the discussion and interaction rather than leading it. The researcher aimed to moderate the discussion by encouraging interactions and urging participants to interact with each other. The researcher also took steps to avoid severe or intrusive control over the group (Krueger, 1994) in order to

encourage students to be more open, which assisted in identifying some unexpected themes (Wilkinson, 2004).

Some group conversations may reflect a greater, more sophisticated understanding than others. Even in the most sophisticated group conversations, some students might be less knowledgeable than others, even at the end of the discussion. Therefore, in this particular study, more attention was given to the focus group, which is critical when interviewing participants, in order to develop a deep understanding of students' behaviours and interactions within the e-learning process.

The focus group technique has been chosen to answer the first, second, and third parts of the third research question (with semi-structured interviews), as this method assisted in comparing participants' answers regarding the forum's content, accessibility, and ability to assist respondents in interacting with each other. More importantly, as these questions concentrate on collective experiences, this method was suitable for comparing responses in order to extract participants' opinions, experiences, emotions, ironies, contradictions, and tensions. In addition, the researcher is hoping to see how all perspectives can be combined and 'fit together' (Duncan and Marotz-Baden, 1999).

To implement this method in this study, five focus group meetings of thirty students (six students in each group) were set up after completing the semi-structured interview process. Each group discussion was conducted over 60-90 minutes using an interview guide. Focus group discussions were scheduled for the last week of April and the first week of May 2013; discussions were held on consecutive days to give the researcher the opportunity to gain feedback from the discussions as transcription commenced after each discussion. The researcher also agreed with the school administration to hold the meetings in the school's tutorial room, which provided a non-threatening environment (Hennink, 2007), plus security and confidentiality were guaranteed and none of the school staff attended the discussion or were allowed to access to the data.

4.7 The structure of the research tool (the forum)

The research tool was an electronic forum designed specifically to capture data for this investigation. The structure of the current forum was based on the theoretical frameworks offered by Community of Practice and Knowledge Building Theory. It was designed to allow students to communicate and interact as they share the same concerns, interests and passion for their topic where their knowledge can be created in several methods, rather than depends on traditional methods such as teacher and textbook. Knowledge within this forum was developed as a community rather than advancement, where participants could comment, interact and collaborate with each other. This forum was restricted to those who participated in this study. Every user was given a username and password that permitted access to the forum. This forum was designed with the collaboration of a professional information technology company, AlMuhajir, in Saudi Arabia. This company is a well-known company in its field in Saudi Arabia and has implemented several projects in schools.

The forum's homepage showed a picture of the Earth as a symbol of the Geography subject (See figure 4.1). Students were given five hours of training on the forum before using it for the purposes of learning. The training session lasted for one week (one hour each day) and was held in the computer laboratory. The researcher ensured that all participants' questions were answered. The training session contained theoretical and practical sections.



Figure 4.1 homepage of the forum

4.7.1 Designing of the forum

4.7.1.1 Introduction

Most of current generation of e-learners experience access to the Internet and access to highly engaging and well-designed multi-media synchronous and asynchronous online classrooms (Barab *et al*, 2003). These can take different forms. The literature indicates several different models and theories of design for instructional forums. The challenge for today's educators is to develop 'best practice' in instructional design by ensuring these theories are utilised in developing instructional forums. In this section, relevant theories will be outlined with reference to their application in practice, including Bloom's Revised Taxonomy and theories proffered by Vygotsky (1982), Laurillard (1993, 2002), Salmon (2000) and Wenger (1998, 2002).

4.7.1.2 Structures of the forum

The current forum structure takes into consideration a theoretical basis that sees learning as a social process where knowledge is constructed through the process of participating in a group (Wenger, 1998), which is one of the underpinning aspects of communities of practice. It focuses on learners who construct and make their knowledge explicit by working with other learners.

Vygotsky (1982) believed that knowledge can be gained through social interactions and individual internalisation. Vygotsky stressed that learners can successfully perform new tasks with the assistance of other people, after which they internalise the new method to attain the same result on their own. Vygotsky concentrated on areas such as co-construction of knowledge, cooperative or collaborative dialogue, and more knowledgeable other.

The forum was designed to meet the needs of a specific curriculum and a targeted group (30 students- the whole sample). Thus, this forum was exclusive to those students and that was to respond to their needs. This means that this forum was not a club for students to socialise (Wenger, 1998). In fact, local cultural perspectives were taken into consideration (Barab and Duffy, 2000) where full separation of males and females was in action. Thus, to achieve secure access, every student has a username and password to log on and log off (see figure 4.2). When a

student logged off, she received a message informing her that her logging off process was successful (see figure 4.3). Students had a full opportunity to know each other through the forum. This forum gave students the opportunity to interact, communicate and collaborate with each other (Salmon, 2000).

Figure 4.2 Log on page

Figure 4.3 Log off page

As not every student had the computer skills or experience required (Jeong and Lee, 2008), there was need to design an easy access forum that students can log on and off safely. In order to respond to this, the forum was designed to allow participants to access and log on and off in the safest way. In addition, a link to respond to technical difficulties was provided, allowing for a response within a short time (see figure 4.4).



Figure 4.4 a message to contact the researcher

As students already knew each other from the class, the identity process became easier to achieve, taking into account that students have to have a commitment to their group (Wenger, 1998, 2002). Every learner needs to establish their online identity, and search for others participating in the same online forum. This practice builds online social interaction and communication (Salmon, 2000). At this stage, students were gathered in the same group (physically or virtually), known to each other and ultimately became members of the group (Barab and Duffy, 2000). In addition, they shared common values and a sense of group or community identity (see figure 4.5), a point seen through them being in the same class, being of the same age and studying the same curriculum. Moreover, students had all agreed to participate in the study and had the same training session.

الرئيسية ألية التعليم من نحن اتصل بنا			
أكاديمية الجغرافيا التعليمية			
عنديات التعليم الإلكتروني			
نوع المسكر	المحتويات	المؤمر	المشاركات التعليمية
اسم المشاركة	المواضيع	المشاركات	المشاركات
الموضوع العام	1	1	الموضوع الأول: فكرة أوروبا
المجموعة الأولى	25	1	الموضوع الثاني: أوروبا
المجموعة الثانية	71	1	الموضوع الثالث: أوروبا
المجموعة الثالثة	63	1	الموضوع الرابع: أوروبا
المجموعة الرابعة	128	2	الموضوع الخامس: أوروبا
المجموعة الخامسة	23	1	الموضوع السادس: أوروبا
إجمالي عدد المشاركين: 300			
إجمالي عدد المجموعات: 5			
إجمالي عدد المواضيع: 10			
إجمالي عدد المجموعات: 5			
إجمالي عدد المواضيع: 10			

Figure 4.5 Five groups in main page

Laurillard (1993, 2002) claims that there are four main aspects of the teaching-learning process and that different educational media can be analysed (and used) in terms of these dimensions: discussions between the teacher and the learner; adaptation of the learners' actions and of the teacher's constructed environment; interactions between the learner and the environment defined by the teacher; and reflections of the learner's performance by both teacher and learner. In the current forum, firstly the teacher's role was through choosing the lessons for participants (see figure 4.6) and the researcher constructed the environment and facilitated access (Salmon, 2000).



Figure 4.6 a message from the researcher

Secondly, students shared the same experience and idea of geography together as they came from the same background, class, and school. As Wenger (2006, p.1) stated '*communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly*'. It can be stated here that those students shared the meaning that related to experience and practice in the shared world of the learning community (see figure 4.7).

اليوم اما جيت لكم عن قبرص



قبرص ي قبرص

قبرص ، دولة قائمة على جزيرة في شرق حوض البحر الأبيض المتوسط في جنوب شرق أوروبا وجنوب غرب آسيا. استقلت سنة 1960 عن بريطانيا. تم تسميتها بعد التدخل العسكري التركي سنة 1974 إلى جزئين ذو أغلبية سكانية يونانية (في الوسط والجنوب) وجزء ذو أغلبية سكانية تركية (في الشمال). أعلن في سنة 1983

سكان قبرص ينقسم سكان البلاد عرقياً ولغوياً ودينياً تماماً حسب التقسيم السياسي الحالي إلى جزء يوناني في الوسط والجنوب وجزء تركي في الشمال. تتشابه الطائفتان في العادات الاجتماعية ومختلفتان في أمور كثيرة أخرى وخاصة الدين .

البيانات	
التسجيل:	Mar 2013
المشاهدة:	14
المشاركات:	42
بعض:	0.04

التوقيت

الاتصالات

الحالة:
 وسائل التواصل

Figure 4.7 Sharing information by one of participants

Thirdly, in this forum the target was that every member (student) was to share the importance of 'doing' as an aspect of achieving community goals. Rather than transferring data, Communities of Practice aim at sharing knowledge among the members. Knowledge sharing combines two things: communicating knowledge and valorising the gained knowledge (Skalicky and West, 2012). Commenting and adding in the current forum gave participants the full opportunity to share their knowledge and experience and to give it its importance. Participants were allowed to comment and add with no prior control (see figure 4.8). This process included: remembering; understanding; applying; analysing; evaluating; and creating (Dodd, 2004).



Figure 4.8 Three participants on one subject

In the last stage, this forum was built on the bases of allowing members to participate with their colleagues who are members in the same forum. Students were permitted to add and comment on the subject that assists them to share common goals; indeed, not only share goals, but also to be fully involved with other members in the same goals and to work effectively with them. This can be seen in this forum through: increased networking; transfer of knowledge; providing opportunities for problem solving; and ensuring mistakes are avoided and new knowledge is created (Raeburn, 2009) (see figure 4.9).

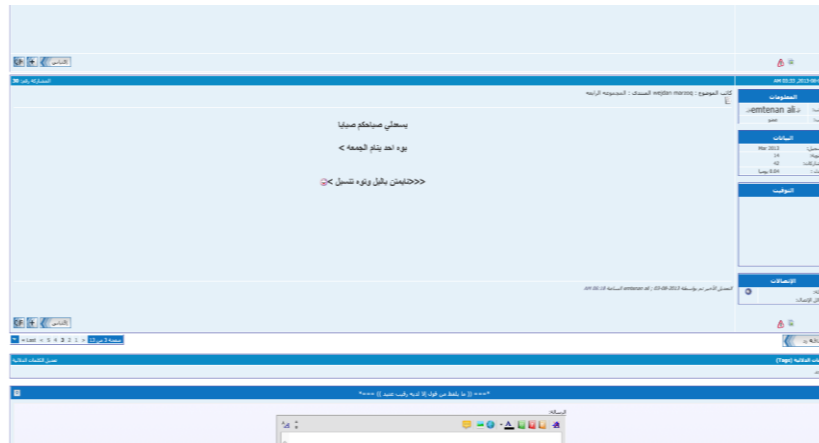


Figure 4.9 Networking between the students

The forum was designed in the way that students felt that they were entering a new experience. That was clear from icons that the students used in order to know about other members. Students also had opportunity to share their experience through adding new information, commenting and replying to posts shared by others. In this stage, the learner started to interact either with subject materials or with other participants. Thus, they started to cooperate and exchange information about learning (Salmon, 2000).

Every student had the opportunity to create new or reinforce old knowledge through asking, adding information, posting and seeking for assistant. This process can be achieved through the activities of: remembering; understanding; applying; analysing; evaluating; and creating. Bloom's Revised Taxonomy participants had several icons related to the students' use of the forum (see figure 4.10). These icons were introduced to those students during the training session and they were asked to try and use them. It is worth noting that students were divided into five groups which allowed every group to discuss specific subjects provided by their teacher (Salmon, 2000).

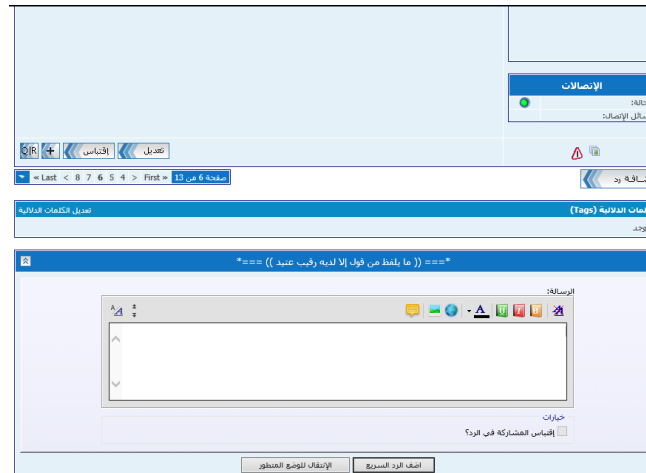


Figure 4.10 an icon that students can use to contact each other

4.8 Ethical considerations

In this study, the researcher abided by all ethical standards adopted by Southampton University. The researcher prepared consent forms to obtain informed consent from participants, maintaining their anonymity and making them aware of their right to withdraw from the study at any stage of the study, and ensuring the confidentiality of data transcripts. After these steps were completed, permission was obtained from the Ministry of Education in Saudi Arabia in December 2011 (see appendix 2). The Ministry of Education was provided with research outlines, including the objectives and methodology of the study.

Several steps were followed to ensure that participants were fully aware and understood the study's aims, and that confidentiality was guaranteed. Students were given the full opportunity to refuse to participate in the study and carry on using their own methods of interaction such as meetings during the break or after school. Every participant was provided with a consent form to ensure that the participants were fully aware of their right to withdraw from the process at any time (see Appendix 3) as part of the ethics approval process of the University of Southampton (see Appendix 4). In addition, the school's head teacher was approached and presented with a copy from the Ministry of Education in Saudi Arabia, asking for permission to meet the students at their school and explain the study's purpose. The purposes of the research and interviews were

explained to the head teacher and the students. In addition, the following steps were followed (Al-Zyoud, 2012, p.96):

- The students were given the opportunity to ask any questions they may have regarding the research and the interview process.
- The students were informed about and given the right to withdraw from participation at any time (Bell, 1999; Cohen *et al.*, 2000).
- The students were also informed in advance that the interviews would be recorded and that they had the right to refuse having their interview recorded.
- No full or real names were used in reporting the study's results.
- Participation in this study did not affect the participants' work (as they were interviewed during their working day and did not affect their homework).
- The participants were informed in advance that their communication, interaction, and collaboration on the designated forum would be observed online.

The teacher of the class was also informed of the objectives of the study, although she was not mainly targeted in this study. However, her reaction was to encourage her students to participate. There was no sign that the teacher was marginalised. On the contrary, the teacher offered to present any kind of assistance that she could to support this study. In addition, the researcher played an important role in protecting participants through a constant process of observing the forum; one role of the researcher was deleting inappropriate comments. However, none of these comments occurred. It is worth noting that parents of participants were fully informed of the objectives of this study (see appendix 5). In addition, to keep privacy online, every student had a username and password that she could use in order to log on and off (British Psychological Society, 2013).

Moreover, participants were informed in advanced how the data provided by them was going to be electronically stored, transported, and deleted after finishing analysis (British Psychological Society, 2013). However, students who used the online forum used their first names rather than their full names.

The researcher also talked equally to the participants individually in advance and before the interview and the focus group discussions, explaining the purposes of the research project and encouraging them to speak unreservedly about what they thought about being interviewed. The research assistant was introduced to the students before conducting the interviews and focus group discussions and her role as organiser was explained. It was also made clear that the researcher would understand if any students were reluctant to participate. In addition, the researcher was aware of the cultural limitations and differences for Saudi females, where parents' permission to participate is required (Metcalf, 2006) in several cases. Therefore, all participants' parents needed to sign a prepared consent form (see Appendix 5) to allow their daughters to participate in the study. Moreover, as the researcher was aware of the cultural differences, the participants had the right to decline the audio recording of their interviews, and in such case the researcher transcribed the interview.

4.9 Sampling

The feasibility study was conducted in Saudi Arabia in December 2011 after obtaining permission from the Ministry of Education in Saudi Arabia. It included meetings with the head teacher, the geography teacher, and 30 female students in order to ensure their willingness to participate in the study, use the designed forum, and be observed online and interviewed. The school was chosen by the Ministry of Education in Saudi Arabia, as it was the most suitable environment to apply the forum given that all students had Internet access at home, which is one of the most important conditions for applying this study. There was no apparent problem with choosing the school by the Ministry of Education in Saudi Arabia. 30 female students aged 17-18 years (13th class – all students in the class) who had computer skills and Internet access at home were chosen from a school for girls in the Alqassim Province in Saudi Arabia. In the current study, the main reason beyond choosing this school was that the school was fully equipped by the Ministry of Education in Saudi Arabia. As stated above, no student was left behind and the forum was implemented for all students in the class.

In this project, the participants were divided into five groups where they worked on five different parts of the project. The groups were divided depending on alphabet classifications, commencing with the first name. This is because in Saudi Arabia, several people have the same tribal surnames and thus it is common to find more than one student who has the same surname. Every group was to upload content and activities from the forum, and share them with peers.

4.10 Data analysis

In order to analyse the raw data that was produced from the study, three methods of data analysis were used: content analysis; discourse analysis; and thematic analysis as shown in the (Table 4.4) below. The chosen methods were informed by the adopted frameworks for the current study, research objectives and research questions where thematic analysis was chosen to analyse students' experience in the classroom, and students' perspectives before and after using the forum while content analysis used to analyse data gained from online observation.

Table 4.4 Phases of the data analysis

Research Objective	Research Question	Research Method	Analysis Approach
To investigate the perceptions of the students with regard to current classroom sessions and pedagogy	What are students' perceptions of their current classroom experiences? Generally, in relation to interaction and communication, In relation to knowledge?	Semi-Structured interviews + Focus group	Thematic analysis
Analyse the methods and strategies by which the online forum can be integrated with the current traditional teacher-centred curriculum	What are students' perceptions of the online forum intervention? Generally, In relation to interaction and communication, In relation to knowledge	Semi-Structured interviews + Focus Group	Thematic analysis
-Assess the benefits and challenges of implementing an online forum taking into account the contemporary pedagogy and the experience of students. -Examine detail and study different ways in which the online forum is	What is the forum used for?	Online - Observation	Content analysis
	How much is the forum used?	Online - Observation	Discourse analysis

Research Objective	Research Question	Research Method	Analysis Approach
integrated into the curriculum and pedagogy through the lens of (communities of practice).	How does the forum develop features associated with communities of practice?	Semi-Structured interviews + Focus group	Thematic analysis

4.10.1 Content analysis (SOLO taxonomy)

Content analysis was used through the pedagogic framework SOLO taxonomy to respond to data collected using observation. In content analysis, the aim is not word counts; rather it is more about coding and categorising. The concentration in content analysis is on categorising words that have similarity in meaning and connotations (Weber, 1990). However, in this study, content analysis was used to find out to what extent the students participated in the forum (communication, interaction and collaboration). This analysis was a systematic content analysis of the activities recorded. The main concentration in this stage was on the times that participants logged in and out, comments, post and replies left by participants.

The main aim for using SOLO taxonomy was to provide a systematic way of how the participation of students grows on tasks using five stages (see Biggs, 1995)

1. Prestructural: here students are simply acquiring bits of unconnected information, which have no organisation and make no sense.
2. Unistructural: simple and obvious connections are made, but their significance is not grasped.
3. Multistructural: a number of connections may be made, but the meta-connections between them are missed, as is their significance for the whole.
4. Relational level: the student is now able to appreciate the significance of the parts in relation to the whole.

5. Extended abstract level, the student is making connections not only within the given subject area, but also beyond it, able to generalise and transfer the principles and ideas underlying the specific instance.

4.10.2 Discourse analysis

The second method used to analyse data was discourse analysis. Discourse analysis is defined as being concerned with language use beyond the boundaries of a sentence/utterance, concerned with the interrelationships between language and society and as concerned with the interactive or dialogic properties of everyday communication (Stubbs 1983: p.1). Discourse analysis is based on details of any speech or written text relevant to the subject. In addition, discourse analysis deals with interviews and focus group discussion, as reflected in this study and its methods (Wodak, 2010).

In order to implement discourse analysis, the following steps were taken: firstly, the researcher started by identifying the social and historical contexts in which each of the data was produced. Secondly, additional copies of source material were prepared by the researcher in order to mark important features. The third step was coding material using a manual method rather than any software, a decision made intentionally by the researcher in order to familiarise herself more with data and to capture every event and interaction). This was started by identifying coding categories see (table 4.5). The first step was to outline a few such categories theoretically, based on the kind of research question, and the knowledge of the subject matter, that the researcher already had in mind that the researcher expected to find. The next step was to examine the structure of the text through looking at the structural features of the texts and whether there sections that overwhelmingly deal with one discourse.

The researcher then collected all statements with a specific code and examined what they had to say on the respective discourse strand. This collection of statements allowed the researcher to map out what 'truths' the text established on each major topic. This map was through examining the interaction between members of the five groups.

Table 4.5 discourse analysis categories

	Group 1	Group 2	Group 3	Group 4	Group 5	Total
Number of students						
Information						
Reply						
Confirmation						
Reply to reply						
Reply to extended Information						
Queries/questions						
Social interaction (platitude)						
Total						

4.10.3 Thematic analysis

The third method used to analyse data was thematic analysis. According to Riessman (2008) and Braun and Clark (2006), thematic analysis is widely utilised in qualitative research to analyse qualitative data reported by individuals and situations. Thematic analysis was defined as '*a qualitative analytic method for: identifying, analysing and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic*' (Braun and Clarke, 2006, p.79).

Thematic analysis is claimed to be the most faithful analysis technique to respond to this kind of data, as it is widely utilised in qualitative research (Boyatzis, 1998). The researcher aims to determine the recurring themes of the participants' responses. The researcher used thematic analysis as it is flexible and freedom theoretical and provides the researcher with direct path to respond effectively to rich data, understand students' perspectives (responses) and perform the interpretation (Braun and Clarke, 2006; Boyatzis, 1998). As Braun and Clarke (2006) indicated that thematic analysis can be used with varied of epistemological approaches, it allowed the

researcher to identify the differences and similarities with students' perspectives and explore more of the collected data and potential themes to emerge. Indeed, thematic analysis provided the researcher with full opportunity to go through the collected data and explored it carefully.

The researcher chose to use manual thematic analysis rather than using software such as NVivo for several reasons. Firstly, the researcher preferred to be in constant touch with data which would not be available using NVivo. Secondly, the researcher used a manual method as she felt that she was responding to rich data that needed manual analysis especially in capturing codes and in some cases some sub-codes. Finally, the researcher was used to the manual approach to ensure that all data was analysed and more importantly to link to data collected from observation.

Thematic analysis is also a flexible method that can respond to different forms of raw data (Braun and Clark, 2006) and is a relatively straightforward method of data analysis suited for a novice researcher (Carmer and Howitt, 2007). The advantages of using thematic analysis with qualitative data are that they are useful for working within a *'participatory research paradigm, with participants as collaborators. Thematic analysis can also highlight similarities and differences across the data set, assisting in generating unanticipated insights'* (Braun and Clark, 2006, p37). In addition, thematic analysis is *'useful for producing qualitative analyses suited to informing policy development'* (Braun and Clark, 2006, p.37), and in several cases the researcher can give some numerical indications of the prevalence of each theme (Carmer and Howitt, 2007). The thematic analysis was based on an approach presented by Braun and Clark (2006) consisting of *'identifying, analysing and reporting patterns (themes) within data'* (Braun and Clarke, 2006).

The researcher considered that 'theme' was a concept that can present a better understanding of the data presented by the participants after analysis. This concept is a result of raw data (transcription), codes and sub-themes where it provides a shared meaning. In the first step of analysis, the researcher aimed to familiarise herself with collected data, a process which continued through the transcription stage.

The transcription process commenced directly after the first interview (after listening to the recorded interviews twice). In this phase, the research questions and objectives were borne in mind and the main ideas were highlighted where the transcription was processed in English rather than Arabic. In addition, the researcher familiarised herself with data through reading and rereading the transcripts while listening to the recordings. This process enabled the researcher to take notes to assist in the analysis. The researcher then used coloured pens to highlight the main and important issues relevant to the study's objectives and research questions. At the end of this stage, the researcher was able to develop a deeper understanding of differences and similarities (Bryman, 2008) which assisted the following stages of analysis.

The next step involved generating initial codes from the recurring meanings, ideas, and concepts. These codes were grouped together to find themes and subthemes from the raw data. By reviewing and re-reviewing the data in first phase, the researcher was able to identify interesting ideas and thoughts that were repeated by participants. These initial codes were generated by constantly marking with coloured pens to highlight the important issues. These initial codes however were countless at this stage. The researcher then moved on to merging initial codes that gave and shared the same meanings, taking into account her research questions. The criteria of merging the initial codes was based on the extent that initial codes were similar or different based on the research objectives and questions.

The researcher moved forward to the next stage of analysis by reviewing the long list of initial codes and grouping them together based on similarities and differences in order to generate subthemes, requiring the researcher to use tables to organise all the initial codes. Several initial codes were merged into one subtheme and few codes were excluded. However, merging and excluding initial codes relied on the research questions and objectives. By gathering codes together under subthemes, the researcher was able to name subthemes, taking into account the research questions. At the end of this stage, a group of coded subthemes were prepared.

In the following stage of analysis, the researcher re-read the whole data and compared the codes, subthemes and potential themes to the original data to ensure consistency. In addition, the

researcher merged some codes with each other to avoid repetition where these codes gave the same meaning and feature (Braun and Clarke, 2006). For instance, the code 'poor communication and interaction between students' and code 'no communication and cooperation between students in the class' were combined in one code named 'students do not have communication and interaction in geography class'.

The researcher at the next stage was able to produce three main themes from the data analysis (see appendix 6 as an example). However, at this stage, the researcher continuously reviewed the data, codes and subthemes. The revision process included rereading data from the semi-structured interviews and focus groups and compared them to the codes, themes and subthemes. At this phase, the researcher combined some potential themes together to have one theme. For instance, the potential theme 'students' uses of the forum' and theme 'students' activity on the forum' were combined in one theme named 'students' reaction to the forum'. It is worth noting that this process was continuous process until the researcher ensured that no further revision was needed. However, these themes fitted with the interpretivism paradigm used in this research. Themes were seen as personal perspectives through concentrating on different aspects and explanations. In addition, the researcher kept in mind some questions that guided the analysis in order to identify how the themes were raised by multiple students with the paradigm as presented by Braun and Clarke (2006, p. 24) such as: *'what does this theme mean? What are the assumptions underpinning it? What are the implications of this theme? What conditions are likely to have given rise to it? Why do people talk about this thing in this particular way? And what is the overall story the different themes reveal about the topic?'*

As data was collected using different sources, the researcher used inductive analysis of all of the data collected from observation, semi-structured interviews and focus groups. As shown above, the data was first analysed separately using three different techniques. For example, thematic analysis was used to analyse data from semi-structured interviews and focus groups where a long list of codes was generated. She then moved towards comparing codes and checking similarities and differences. This constant comparison using tables assisted in generating common themes and subthemes based on shared meanings and features. In the whole process, the research

objectives and questions were the main basis the researcher depended on to include, exclude and combine codes, themes and subthemes. Analysis of the data revealed three main themes and seven subthemes as shown in (figure 4.11) identified from the interviews and focus groups. These themes were linked to the research aim and questions in order to expand on and explain them (see figure 4.12).

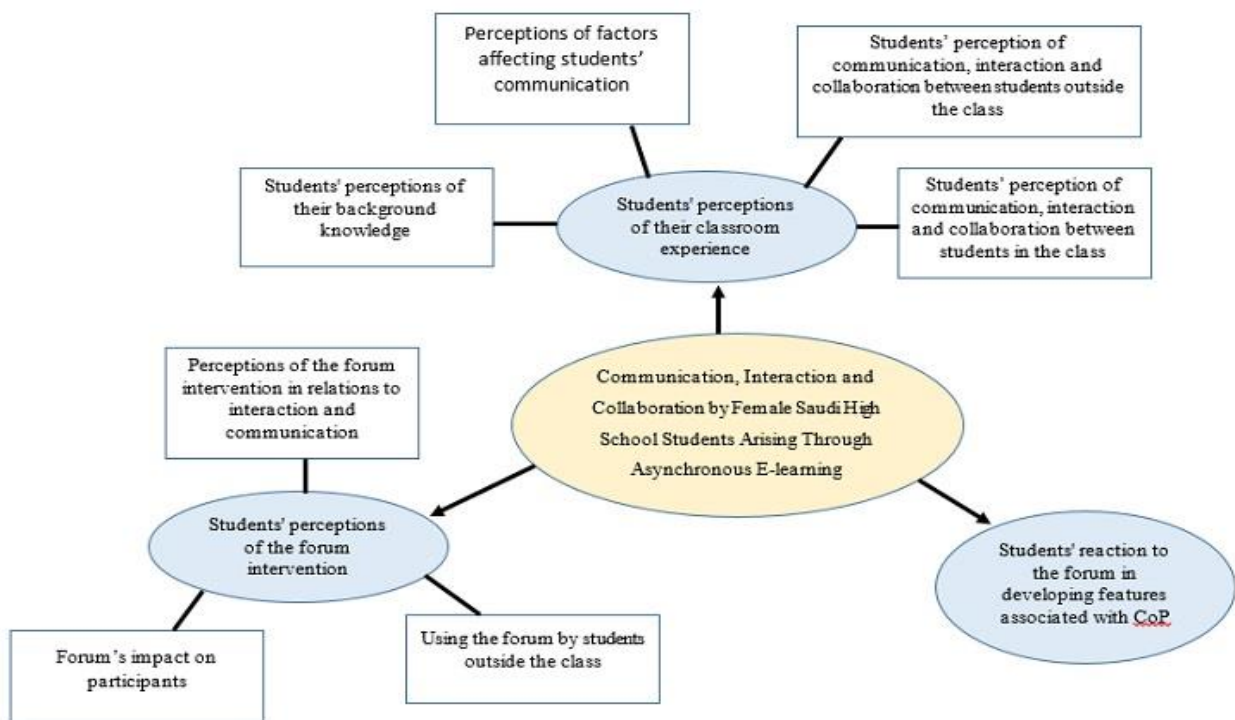


Figure 4.11 Main themes and sub-themes of research data

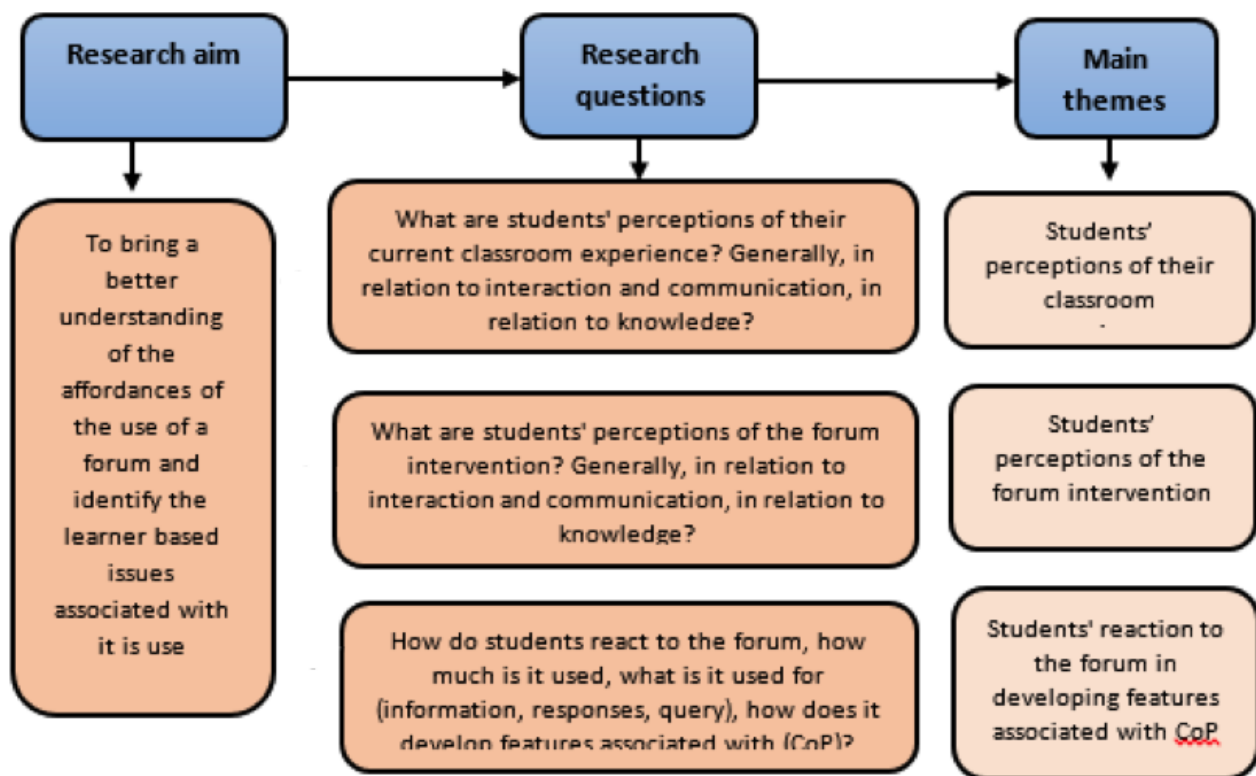


Figure 4.12 the Relationship between the research aim, questions and themes.

4.11 Validity and reliability

Validity and reliability are the main two factors that always influence the quality and credibility of qualitative research. Validity in qualitative research indicates that how the specific procedures involved are appropriate to produce accurate findings, while reliability in qualitative research indicates consistency in the collected data and whether a repeat of the process with a similar sample would provide the same result.

Kirk and Miller (1986) and Denzin and Lincoln (2005) indicate that validity in constructivist or interpretivist research is more difficult to achieve than in positivist research. Unlike quantitative research, triangulation techniques utilised in qualitative research (Golafshani, 2003). Bulmer (1979, p. 49) indicates that *'qualitative researchers try to achieve validity not through manipulation of variables but rather through their orientation towards, and the study of, the empirical world'*.

In the current study, triangulation was used to achieve a measure of validity and reduce the bias of the researcher (Shenton, 2004). As Creswell and Miller (2000) indicate, validity is where researchers search for convergence among multiple and different sources of information to form themes or categories in a study (p. 126). In this study, multi-source data collection methods were used: observation, semi-structured interviews and focus groups. These three main sources can *'lead to more valid, reliable and diverse construction of realities'* (Golafshani, 2003, p. 604). In addition, as Patton (1990) and Goldasfhani (2003) indicated, using these three sources of data improved not only validity but also the research or evaluation of the findings. As this is a qualitative research project and concentrates on perceptions of participants, having more than one perspective using several sources of data makes data closer to reality (Bapir, 2012). In addition, as participants have more than one view of reality, there was a need to have more than one data collection method (see Johnson, 1997) which was reflected in the research validity when findings approved by the constructors of the multiple realities (Lincoln and Guba, 1985; Miles and Huberman 1994).

Another technique to ensure validity was through the clarity of research objectives, questions and research plan, documentation of the study's processes, the manner of checking and rechecking of transcripts to ensure the accuracy by researcher and participants, and the checking of codes by comparing them with the derived findings. In addition, data was collected under acceptable circumstances. As mentioned earlier, students had the full opportunity to participate and talk freely and any factors that might have affected students' participation and responses were avoided, a technique which reflects the quality of data, confirms meanings, and avoids bias (Miles and Huberman, 1984).

Reliability in qualitative research can be achieved through examining the trustworthiness. As Seale (1999) points out *'trustworthiness of a research report lies at the heart of issues conventionally discussed as validity and reliability'* (p. 266). Thus, reliability can be obtained when repeated investigations of a social phenomenon achieve the same findings. The researcher can check the characteristics of the data to reflect confidence in the followed procedures. To achieve transferability, the researcher ensured that provided sufficient information of the site of the study

to assist reader to make such transfer (Firestone, 1993; Lincoln and Guba, 1985). In addition, the researcher has provided a deep and wide description of the phenomenon that this research aims to investigate in order to assist the reader to have a deep understanding of it and more importantly to compare the cases in this research with cases that future researchers might work with (Shenton, 2004).

4.12 Summary

This chapter outlined the main research methodology utilised in this study. The research problem was presented and explained in depth and linked with the research objectives and questions. In addition, epistemological standpoints were identified and the interpretivism paradigm described. Qualitative research was used to collect the required data and answer the research questions using case studies as a research strategy. Three research methods used in this study of observation, semi-structured interviews, and focus groups were presented and discussed in detail, as was the main research tool (the online forum). In addition, an explanation was provided on how the data was collected from the forum system. The sampling technique used in this study was explained and justified. Ethical considerations were also described, and some practical steps that were applied were explained. In the last part of this chapter, a thematic analysis as the technique to analyse the row data was presented.

Chapter 5: Findings

5.1 Introduction

The aim of this research is to explain the students' perceptions of their experiences in their classroom relating to their communication, interaction and collaboration before and after using an online forum, performing particular learning tasks in of the curriculum subjects and to identify the learner-based issues associated with its use at a secondary school. This study was applied on a sample of 30 female students studying at a secondary school in Boraydah, Saudi Arabia). The analysis of the students' perceptions focused on the research questions:

What are students' perceptions of their current classroom experiences?

- Generally
- In relation to interaction and communication
- In relation to knowledge

What are students' perceptions of the online forum intervention?

- Generally
- In relation to interaction and communication
- In relation to knowledge

How do students react in the online forum?

- How much is it used?
- What is it used for?
- How does it develop features associated with Communities of Practice?

Online forum observation, semi-structured interviews, and focus groups were utilised to collect data as described in the previous chapter. The data was transcribed and coded during the collection process where thematic analysis approach, systematic content analysis, and SOLO taxonomy were used to analyse data in depth.

The data analysis process indicates that there were three main themes that emerged from the analytical process: students' perceptions of their current classroom experience; students' perceptions of the forum intervention; and participants' reaction to the forum in developing features associated with Communities of Practice.

As mentioned in the previous chapter, the researcher studied the participants' interactions and the ensuing community of practice through the use of the forum. It can be seen from the main three themes that they were understood through the frameworks and strongly linked to the research aims and questions.

The first two themes have several sub-themes, and subsequently several codes. These sub-themes and codes have been used in presenting the research results. The strategy that the researcher followed to present the themes, subthemes and codes was to commence with the main theme as a heading and then use its subthemes as sub-headings. Codes, however, were utilised to support the themes and subthemes and to provide vivid examples of participants' perspectives. Quotes were chosen from the interviews, observations, and focus groups and provided to support the findings. The criteria that were used by the researcher to include and exclude quotes were the richness of the quotes and the extent of the perspective amongst the participants. Thus, the chosen quotes were used as evidence; as explanation; as illustration; to deepen understanding; to give participants a voice; and to enhance readability (Corden and Sainsbury, 2006). However, the main themes are shown in (Figure 5.1).

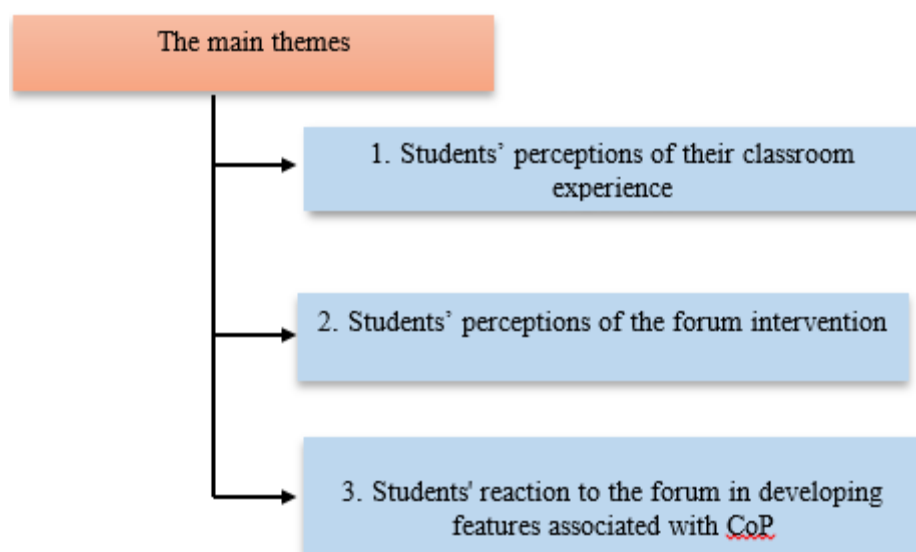


Figure 5.1 Main themes of research data

In order to organise this chapter, three main themes are used, respectively, as presented in the previous chapter. In addition, no real names were used in reporting finding and the participant's responses are coded in order to indicate the source of the interview quotes presented in this chapter. In order to report findings, the researcher used the number of interviewees and focus group (for example (I/7) to mention the seventh interviewee and (F.G/3) to mention the third focus group) to ensure that participants' confidentiality was not infringed.

5.2 Students' perceptions of their classroom experience

Data for the first theme was collected from individual semi-structured interviews and focus groups. Data analysis indicates that participants suffered from poor communication, interaction and collaboration with each other inside and outside the classroom, the reasons for which can be attributed to several factors and took several dimensions (see figure 5.2, below).

One example was the students' poor communication with their peers or lack of available opportunities to communicate with others. In general, participants believed that they did not have adequate opportunities or motivation to initiate communicating with peers. None of the participants indicated that they had any reinforcement from their school staff, including their teachers, to communicate or socialise with peers. In a vivid example from several interviewees, they indicated that their socialising in the class and school was low and limited, as in the case of (I/15) when she was asked about her communication with her peers inside and outside the class respectively: *'No, it was not too much. Not with everybody, only my close friends in the classroom'*.

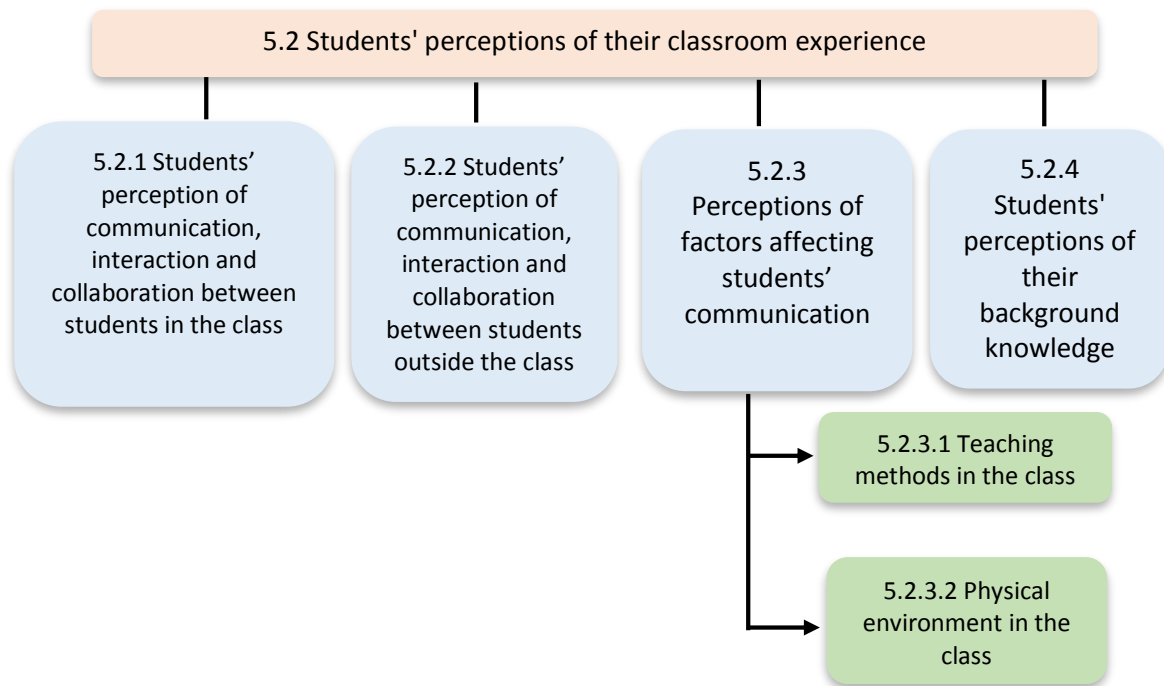


Figure 5.2 Sub-themes of the Students' perceptions of their classroom experience

Participants noted that their interaction regarding the subject was always linked to the educational system. However, it appeared from analysis that students' communication, interaction and collaboration in general was fully controlled by their teacher, who represents the Ministry of Education. When participant **(I/20)** was asked if there were any discussions and communication between her and her peers in the classroom, she quickly replied: *'No, of course. It is not allowed'*. Overall, participants clearly indicated that this control by their teacher forbade them to interact and communicate. However, participants reported that they were not allowed to ask their colleagues questions, as in the case of **(I/10)** who was asked if she was allowed to ask her classmates to solve problem facing her in geography: *'No, I have not and I cannot ask them to'*.

This lack of peer communication apparently has resulted in communication, interaction and collaboration between participants inside and outside the classroom where there were many factors which interfered or disturbed the sending and/or receiving of verbal and non-verbal messages between students.

5.2.1 Students' perception of communication, interaction and collaboration between students in the class

Communication in this study is defined as 'any verbal or non-verbal attempt by students to communicate with colleagues; where there is a sender and a receiver and the aim is to transfer or receive particular information'. Communication therefore includes: facial expressions; body movements; tone of voice; words; writing and publications; phones; and Internet. 'Interaction' is defined as verbal and non-verbal behaviour that takes place inside and outside the classroom where there is an exchange of different types of information between the participants, and this process can be observed. Collaboration is defined as a process of searching, finding, sharing information and assisting colleagues to understand the information inside and outside the class in a sustained way.

Data analysis clearly indicates poor communication, interaction and collaboration between students in the class. However, there was some collaboration in the class that can be described as negative experience. This reaction comes from the indications reported by participants who were willing to assist their colleagues in responding to some questions without real understanding of the subject. In addition, there were a few attempts by participants to ask questions that were not answered by the teacher due to the lesson's time (45 minutes), as in the case of (I/7): *'The lesson is only 45 minutes, so we do not really have time to interact about anything, this time is only for the teacher to teach us, also she does not let us to communicate or interact'*. In some cases, participants reported that they did not have the opportunity to expand their knowledge (concentration was on what is written in the book with no intention to expand the subject or provide participants with up-to-date information).

However, participants who reported that there was interaction and communication in the classroom attributed such activities to when, for example, the teacher divided them into groups to answer a question, as reported by (I/29):

'I would say there is minimal interaction when the teacher asks a question and the student cannot answer, another student will offer to answer in her place or correct her answer... Sometimes, when a

student fails to identify a city on the map, we can show her the right answer'.

These indications by participants varied between 'no interaction' and 'poor interaction'. One student **(I/19)** who participated in this study clearly shows this poor interaction: '*there are no communications or interactions between us in the Geography classes*', and as **(I/1)** indicated: '*we usually attend the geography lesson while the teacher explains the lesson, then we go home to do homework and our communication is nearly rare*'. This poor interaction was also reported by the participants on the individual level, where there was no direct interaction between participants outside the class or the school. This clearly indicates that poor communication and interaction between participants has roots and reasons as well as manifestations.

One of these apparent expressions was the interaction between participants who know each other. It appears that there was a little interaction between participants who know each other:

*'We have no interaction in the class. In fact, we barely know each other. As you might know there are many students in the class and we are not allowed to interact with each other if you want especially in Geography classes.'***(I/9)**

The richness of the quote presented by the participant **(I/9)** indicates several issues that should be studied carefully. Firstly, there was poor interaction and communication between the students inside the class. Secondly, there were large numbers of students in the class, which minimises the opportunity to communicate or interact between them. Finally, there was the role of the teacher, who is the only one who gives permission for the students to interact. It appears that teachers were the main obstacles to student interaction in the Geography class. Several participants reported that their interaction with each other or with the teacher was just when they needed to answer questions asked by their teacher:

'We are not allowed to talk much in the class and mostly talking to answer the teacher. Teacher asks us about our homework and in

seldom cases she asks us to participate in the class. I can tell you that we listen more than we talk. Actually we do not talk (laugh)'. (1/18)

In some cases, the interaction between participants, which was described above as 'poor interaction' or limited interaction, is occurring in very limited situations as explained by participant **(I/21)**: *'we just communicate and interact before exam'*. This clearly indicates the poor level of the communication the students experienced. Occasionally, students' interaction and communication was mainly concentrated on discussing general information of the subject, as reported by participant **(I/16)**: *'Sometimes we discuss things and I receive information from other students but I cannot be sure if that information is correct or not'*. However, participants indicated the negative consequences that they might face when they communicate or interact with their classmates:

'Yes, we do not interact with each other. When we try to communicate or interact in the Geography class we always face some "troubles". Teacher does not allow us talking with each other during the class even if we want to clarify some issues related to the lesson. If we do so, she shouts at us. I have experienced that a couple of times and then decided not to talk'. (1/10)

Students feel that talking (communicating and or interacting) is not desirable in the school, which forced them to avoid it to evade undesirable consequences from their teachers as reported by **(F.G/5)**: *'In my point of view, there is not a great deal of interaction between us ... In fact, the teacher does not allow us to do so because she thinks it is a sign of disrespect to her status and loss of control in the classroom'*. Instead of interacting with each other, the teacher has the main role and is the 'only speaker', as reported by **(I/2)**: *'we are not allowed to talk; teacher is the only one who is allowed to talk in the class'*. However, as a result of these practices by teachers, the students felt that they do not need to communicate or interact with each other as participant **(I/23)** explains: *'Interaction between us depends on*

the teacher's instruction'. When student (I/11) was asked if she tried to communicate with her colleagues, she replied,

'Why would I? I do not think I need to. If I am going to be punished for just asking my colleague a question, why would I? I do not want anyone to give me a headache or report it to the head teacher or my mother.'

It can be seen that this participant was afraid of the consequences of communicating with her classmates. An interesting point here is that the student was scared of reporting that to her family or even to the school administration, which indicates an implied consent from parents and school administrators to these practices.

However, few students indicated that the absence of interaction with other participants has a positive effect on their achievement. According to student (I/17), learning without any interaction with others assisted her in having a full understanding of the subject:

'I prefer not to have any interaction because I like to concentrate with the teacher. If there was any interaction, I would not follow the teacher. In my opinion, the role of teacher is to explain the lesson and the students' role is to take notes and follow the teacher'.

5.2.2 Students' perception of communication, interaction and collaboration between students outside the class and the school

The described poor communication and interaction between participants as shown earlier appears to be extended to outside the class as well as the school. It has been reported by several participants that their communication and interaction outside the class was remarkably poor. In an apparent example of this poor interaction, participants reported that their interaction was limited to morning greetings, as reported by (I/24): *'we just sometimes say "Assalam Aliukum" or good morning when we enter the class'* and where *'chatting is not allowed at all'* (I/29). It is worth noting that greetings are obliged by Islamic values and

cannot be relied on to be considered as an interaction or communication. However, this limited interaction outside the class was the only 'communication' that was reported by participant.

Outside the school, it also appears from what was reported by participants that their interaction outside the school was very limited and only occurred occasionally. This interaction however was just due to do their homework, which was rare:

'We do not normally meet or talk outside the school. In fact we do so in the morning before the class to review some of our homework, that's all. I cannot remember that I have ever talked to one of my classmates outside the school'. (I/26)

Moreover, participants reported that they would have communicated with their classmates outside the school if they had the opportunity. This report was apparent in most of the interviews and focus group discussions, and it can be seen through a discussion that took place in the **(F.G/2)**:

*'I have never talked to (...) before, I mean I do not remember that I did. Yes, I saw her in the class and never spoke to her, have I?
-No, I have never spoken to you. In fact I barely noticed you in the class (laugh).
-You see, Miss, We are in one class and probably spent some years in the same school and have never communicated with each other.
What a shame'.*

Participants attributed their lack of interaction outside the class to different reasons. In **(F.G/2)**, students reported that due to the lack of communication, different perspectives minimised their interaction: *'Some students have different opinions about different topics, and this reduces interaction between us'* while another participant reported that the lack of interaction with her classmates outside the class was because of the contradiction of their opinions: *'If I care about a subject and another student cares about a different subject, it*

makes it difficult for us to even talk about one main subject'. However, this contradiction did not stop them of trying to interact with classmates, given the encouragement and opportunity: 'as B said, if I do not care about a subject, then why would I discuss it? But I sometimes learn from different students about subjects that I do not care about and it is interesting'.

5.2.3 Perceptions of factors affecting students' communication

According to the participants, there are several factors affecting students' communication apart from what was reported earlier. It appears that the students learn just for the exam as noted by **(F.G/4)**: *'sometimes when we want to find out about the most important topics that might be covered in the exams'*. In addition, a lack of time available for students was critical in minimising students' interactions:

'You ask me why do not we chat or interact and I can tell you that we do not have time. When and where we can chat if we do not have time? We suffer to manage our time and run between classes. In addition, we are not allowed to talk inside the class or we will get punished'. (I/25)

The participants went further by describing their interaction in Geography in general as **(I/26)** explains: *'I like Geography and like knowing about the world but one source was not adequate'.*

Clearly, the source of information was the textbook; and the teacher's role was to reflect what was written in the book. The following quote illustrates this issue:

'I think the big problem here is that the teacher who believes that her role is to deliver what is in the book rather than allow us to interact with the information. I mean, we should receive, understand and then argue with the teacher not just receive what she says'. (I/21)

The participants also reported that their use of their textbook was exclusive to their homework. Student **(I/9)** indicated that she rarely opened her book out of the class: *'why*

should I do? I do not really need as I just use for homework'. In addition, this resulted in some strange acts where some students indicated that they fall asleep during the class as reported by participant (I/28):

'We use the book when we have an exam rather than to use to interact with each other. In my opinion, the book supported by our teacher's understanding of the book's role plays an important role in hindering communication with each other'.

Moreover, participants reported that their lack of interaction and communication caused more of their isolation from their colleagues. This isolation can be seen through what was reported by participant (I/3), who indicated that her communication and interaction with her classmates was exclusive in short chatting before exams: *'no, we do not talk and I only talk to few classmates who I know in the class to help with my homework or before exam'.* This clearly indicates a lack of communication, and indeed an urgent need for them to learn about Geography, especially with learning tasks, such as homework and exams.

Thus, the participants used alternative resources to find information about the subject. However, these resources might not be adequately accurate, and from the teacher's perspective were not acceptable. The participants argued that they do not have up-to-date and accurate resources that they can test and share. Their urgent need for this kind of information can be seen through their interaction in the forum (as will be presented below).

It appears that television was the main source of information for some participants. In a few cases, social networks were used to gain information as reported by (I/23): *'I have gained my geography information from the environment and sometimes from watching TV or through social networking sites'.* It has also been reported by participants that their learning from television was better than their class:

(I/4): 'Yes, I learned from TV a lot of things. Let me be frank here that several things that I learned from TV were better than our old book. As I said before, our book as issued ten years ago and it is just boring (laugh).

Researcher: *Why it is boring?*

(I/4): *Because it does not provide us with fresh information and it is just boring. To be honest with you, I do not really like Geography class because of the teacher and our textbook. I prefer the TV.'*

The above quote clearly indicates the distress that participants suffer when learning Geography. It should be noted here that relying on television to acquire new information was mentioned by most participants in both interviews and focus group interviews. Moreover, the students went further by indicating that their role was totally absent in the class. This attributed to several factors as will be discussed below.

5.2.3.1 Teaching methods in the class

A series of complaints was reported by the participants, as can be seen through the following examples. First, the students reported that traditional ways were used in teaching; she used her book and explanation without any assistant materials like maps or learning activities, as noted by one student in **(F.G/1)**: *'the real situation for us is that teacher enters the classroom, sometimes ask us about the last lesson, and sometimes not, then she gives us the new lesson, after that gives us the homework and finally leaves the classroom'*. This way was difficult for them to understand the lessons, memorise or recall them. Second, it was reported that the teacher's mission was to transfer the information from the book to the students:

'I do not know what our teacher does? I can read and write so I can read what is written in the book without her help but do I understand everything? Do I participate with my colleagues?! I do not think so'.

(I/3)

Moreover, participants reported that up-to-date information were not used in the class. In an apparent example, participant **(I.27)** reported that she noticed the difference when she travelled with her family, and compared what she saw and with what is in her book:

'When we travelled abroad, I was talking to my mother about our trip and what I studied in Geography. Let me be clear here that most of information we studied about Turkey was not up-to-date. Yes, some of what our teacher told us is right but there are many new things and changes happened in previous years'.

In a vivid example from the local community, participant **(I/8)** reported that she argued with her teacher about naming the airport in the city:

'I told her that the new name of the airport is 'Prince Nayef's Airport' but she refused to listen and insisted that the name written in the book is Alqassim Airport. I have tried with her but she did not listen'

Researcher: *-how do you know that the name has been changed?*

-I heard it from the news on T.V.'

The participants indicated that they wanted on some occasions to create their own activities and talk about their travels by linking it to their lessons. However, those students faced rejection by the teacher, who concentrated on the book. Using traditional teacher-centred methods resulted in disinclination of students of geography, as noted by participant **(I/16)**: *'Of course, if the teacher style is suitable, I will like the subject '.*

In an apparent example, student **(I/14)** indicated that after she visited Switzerland with her family, she wanted to share information with her colleagues, but she was scared of telling her teacher as she refused in many prior cases.

Interestingly, some participants who could not understand the topics had to hire a private teacher at home to assist them with their studies. In the case of student **(I/10)**, it was apparently difficult when she was trying to understand some topics:

'Well, our teacher use very old teaching method and she just tell us what was written in the book. As we are not allowed to chat with each other in the class about the topic and not allowed to ask questions, I asked my father to bring me a teacher at home to help and he did. My private teacher is brilliant and she helped me a lot'.

It is worth noting that having a private teacher at home is not a preferred option for several participants for more than one reason. Firstly, having a private teacher costs a large amount of money that not every family can afford. Secondly, most private teachers are foreigners (non-Saudis) and most of them teach scientific subjects such as Mathematics and Physics rather than Geography and History. Thirdly, some students were not brave enough to ask for a private teacher, as they might be stigmatised as 'lazy':

'I was so scared to ask my father to bring me a private teacher. I firstly talked with my mother who firmly refused and said: are you lazy? I can talk to your father about bring math or physics teacher but not Geography'. (I/24)

Indeed, participants have presented some suggestions including using the Internet in teaching. Those students took into account that most geographical information is available in the new technological software:

'I do not know why our teacher do not use computer or Google Earth?! I mean everyone uses computer with Internet. Anyway, I think it would be easier for us to understand the lessons, if our teacher used computer and Google Earth'. (I/20)

The argument that the teacher used to rely completely on the textbook does not appear to be true and needs examining. It has been reported by several participants that the Geography textbook has several activities that can be accomplished by collaboration between the students but the students had never been asked to do so. As noted earlier, it

appears that the teacher's main mission was transferring information to students without ensuring the quality of the teaching method that was utilised:

'At the end of every lesson, there are some activities that we can work on as a group of students but have never done this or let me be clear that we have never been allowed to do so and I do not know why. I have heard that we have to finish the curriculum as soon as we can but I do not believe this. I do not know if our teacher can manage the time'. (I/4)

It appears that the student in the above quote blames her teacher for poor interaction and collaboration with her classmates. In fact, poor interaction can be attributed mainly, as reported by that participant, to the teacher and the textbook. In both cases, the teachers do not assist in providing sufficient ways to assist the students to communicate and interact.

However, another student indicated that she was satisfied with her teacher, she understands her well, and there was no point in changing her methods:

'Well, I understand my teacher and I cannot see the point of changing her. I heard some of my mates complaining about her but I understand her and I cannot see why they want to change it? Anyway, I am happy with her and clearly understand her'. (I/17)

When she was asked the reason behind showing a different view from her colleagues, she indicated that she understood her teacher and she used to memorise the information provided by her teacher: *'I listen to the teacher and follow what she says and when I back home I read the book and memorise it for the exam'.*

The participants reported that the traditional teacher-centred methods were used in teaching, which limits their communication and interaction. Students saw that their teacher's performance was exclusively to deliver the lesson as reported by **(F.G/5)**: *'the geography lesson in particular does not offer any opportunities for interaction amongst students or between students and teacher... The teacher delivers her lecture and that's it for*

her'. The teacher leads the whole process in the class, explains the lesson, and asks questions:

'Well, our teacher enters the class just to explain the lesson and uses hard and traditional way in explaining it. She does not encourage any of us to participate or do anything to assist us to engage in the lesson!'

The researcher: What do you mean?

I mean she does not encourage us or allow us to ask questions.

The researcher: So what do you do?

What we do is just keep silent for 45 minutes. We are allowed to 'open our mouths' just when she asks us some questions'. (I.12)

The above dialogue between the researcher and student **(I/12)** illustrates the way that the teacher uses to response to her students. It clearly indicates the traditional teacher-centred methods of teaching that teachers insist on using in Saudi Arabia, especially abstract concepts. However, the way that the teacher responds to students produced a kind of space between the participants as reported by **(I/2)**: *'when are not allowed to talk to each other, it is expected that we will not communicate'*.

In addition, the participants reported that punishment was to reduce their grades if they tried to communicate with each other in class. It can be seen that the maintain discipline was a priority.

'When I tried to talk to my colleague (...), the teacher started shouting at me and said: I will reduce two marks from you. As you can see we are not allowed to talk. I did not mean to talk to my classmate about something out of the class but that what she said to me'. (I/5)

As mentioned earlier, some participants were scared that the teacher would contact their parents or report them to the head teacher. In both cases, there was a fear that talking to

classmates will be followed by punishment. All of the participants agreed that the teacher was the only one who controls the class. In one of the focus group discussions, the following discussion took place:

'Yes, teacher is the only one who controls the class. She does not allow anyone to talk or do anything.

Yes, indeed. Do you remember when we tried to ask her and she did not allow us to talk

Or when we asked about doing a research within a group about Europe. She even refused to listen to us'. (F.G.1)

It also appears that the teacher's control has some negative reflections on students as part of reducing their interaction. One student reported that they were either not interested or scared of arguing with their teacher when they did not agree about any information provided:

'Why do I have to care when no one listens to me or get punished when I argue with my teacher?!

Yes, we do not agree on things she says as we know more or something new about the topic that she does not know or has'. (I/25)

Finally, it was reported by participants that their teacher did not give them any kind of attention as learners. This can be seen through reports by students that the main mission for their teacher was to give as much information as possible about Geography using traditional ways without taking into account the participants' processing process. As student (I/7) explains, *'teacher does not care about students and if they understood what she was teaching. She just wants to finish on time and leave the class without thinking of us'.*

This goes in line with what was reported by other participants, that their teacher uses traditional methods in teaching them such as depending on the book without any participation by her students and that left negative effects on them.

Traditional teaching methods used by the teacher refer to the traditional teacher-centred methods, which mainly concentrate on the teacher. In this method, teachers design, implement, and lead the lesson where the students' role is to receive information. However, this process was described by one student in **(F.G/2)** as: *'Sometimes... The teacher asks a question and I answer that question ... But another student may have a different answer ... Sometimes, I learn from other students' ideas and knowledge'*.

In addition, using traditional methods in teaching the curriculum had some negative reflections on students. First, the students reported that traditional methods used by their teacher forced them to not pay enough attention to this subject, as **(I/7)** explains: *'I hated this subject because of the way we learn it. It is a very traditional way'*. Second, students indicated that they had poor results because of the traditional method of teaching. It has been reported in one of the focus group discussions that the students who had strong results in Geography relied on memorising the information:

- 'All our grades were low in Geography and that was mainly to the way that we learned it...

-Some students had high grades in first and second exams.

-One or two of them and you know that those students just did memorise everything in the book, did not they?' (F.G/4)

Third, students indicated that even those who memorised the information were likely to lose this information after attending exams. This, however, was attributed to the way that the teacher was dealing with them, and the method she used to teach Geography to them:

'Hating Geography was first thing I felt after I attended three or four classes. Our teacher is very rigid and always read directly from the book. Ok, I can also read and I can read it at home. I used to memorise it for the exam and that is it.' **(I/13)**

The students went further by reporting that these methods were not adequate to learn Geography. This clearly indicates that the students were looking for a better way to learn their subject, and the school and the teacher clearly failed in providing what students

needed. In an interesting note from one participant where she indicated that traditional methods were being used, the teacher made some students fall asleep in class:

'Some of the students, especially those who sit in the back, are always asleep in the Geography class. I had to wake one of them up once (laugh). As you might know that there are many students in the class and the way we sit in rows allows those who are in the back to lose their attention and be distracted easily.' (I/3)

In another instance, participants reported that what they were asked is just to listen, memorise and do their homework, as reported by participant (I/18): *'what we are asked in the class is just to listen to the teacher and do our homework. This really is not good as I have started losing my interesting in the subject'*. This view can explain why students feel bored and lose their attention in class. It should be noted here that traditional methods of teaching are common in Saudi Arabia.

Finally, participants indicated problems with losing their motivation due to the difficulties that they face in learning Geography. Negative reactions by students can be seen through several quotes, which will be shown below, and a discussion in the focus groups.

- 'Geography does not mean anything to me, cannot believe that we still learn in old ways.

- Yes I would love to learn more but I do not want just to 'fill my mind' with stuff without understanding it. I do not think Geography should be taught in this way.

- I used to love Geography and know about countries and other cities in my country but from what I can see in the class I do not think I want to know more.

- 'I went abroad last summer with my family on holiday and saw many interesting things and I thought when I back I will study something about that country and then I discovered that it was just like a joke. Firstly the book was outdated and secondly the way that

the teacher talked about the subject was just not right. I was so enthusiastic and thought she would ask if any of us been there but she did not. When I saw her in the break and I told her that I visited that country and would like to tell the class about it, she simply said we do not have time for this and walked away. I was so disappointed'. (F.G.2)

In another focus group discussion, students pointed out that they lost their motivation to participate in or learn Geography:

'I do not think I want to study Geography anymore in that way.

-Me too, I was going to study Geography at university but if they are going to teach us in the same method I do not think I am going'.

(F.G/4)

It can be seen from the above extracted quotes that using traditional methods in teaching Geography left negative consequences on students, who were looking for a new method, more acceptance from their teacher, and a change in their physical environment. This need was shown clearly from conversations in focus groups, and in responding to semi-structured interviews.

It can be concluded in this part of the findings that students suffered from poor communication, interaction, and collaboration in their class, and they were due to varied factors and reasons. The frank answer as extracted earlier indicates that the teacher plays the main role in hindering communication and interaction, where a rigid disciplinary system was forced by the school and teacher. In addition, the teacher's traditional method of teaching plays an important role in losing students their attention and interest in learning Geography. The curriculum was described by participants as difficult, who said that it should contain some activities that assist students understanding it, while the teacher's methods relied on memorising, which assisted in distracting students. The participants said that they were not allowed to chat or talk in class, and moreover were not permitted to sit in groups. All of these factors and some others were reported by participants, and highlight the urgent need for using another, alternative method to increase communication and interaction.

5.2.3.2 Physical environment in the class

Participants reported that the physical environment inside the class plays a critical role in preventing communication and interaction between students in the Geography class. However, most of these hindrances can be attributed to implementing a learning environment by the teacher. On top of these implementations was the way that the students were seated in the class. Figure 5.3 illustrates the way that students were placed in class, which can affect their learning approach. The desks had not been organised as well as they should be, which made it difficult for the students to communicate and discuss the session without interfering the class. Participants reported that they were forced to sit in rows not groups, as reported by (I/30): *'we sit in rows in the class rather than groups and this makes it difficult to chat.'* In addition, some students reported that they were ordered to sit in the back of the class:

'I have been sitting at the end of the class and was not allowed to move. How can I interact with other students in the front?! That is just impossible. When I tried to move I received a reprimand from my teacher. I just stopped'. (I/9)



Figure 5.3 Students' seats in the classroom

It appears that those students cannot interact or break the teacher's order. It can be seen here that the teacher's order is extended to the break between classes, where the students are afraid of receiving a punishment or a reprimand that might be reported to the family as noticed earlier. It can be concluded here that students were not allowed to change their seats or interact with each other, and this is mainly due to the teacher's role of teacher in

the class as reported by (I/1): *'I mean that we don't sit as close groups, I sit at the end of the class and my colleagues in the first desk, so there is a distance between us and we can't tell each other any information'.*

In addition, the students attributed the physical organisation of the classroom environment to the school. The role of the teacher described above played a critical role in hindering interaction. This role can be seen via the following quote provided by one student (I/28):

'I cannot see the point of forcing us to sit in rows in a big room. The teacher refused constantly when I tried to change my place. Again, the teacher in the beginning of the academic year asked us to sit in that 'stupid rows' and since then we did not change. If you want to change your seat, you have to ask for a permission and the answer always is no.'

The student's question has no logical answer. However, the absence of dialogue between the teacher and the students reflects a misunderstanding of their roles. This can be noted in the teacher's insistence on forcing the students to sit in accordance with the school's view.

The participants also reported that their physical position in the class affected them. One student (I/25) went on to describe her sitting in the middle of the class as a 'disaster': *'I have been sit in the middle of the class and forbidden from moving. It was a total disaster as I could not move, interact with my colleagues or follow the teacher'*. This affection however was also reported by the focus groups as one student reported that from (F.G/3): *'I think that there isn't any interaction because of the way we are all seated in the classroom... We sit behind each other in rows ... But, maybe if we sit in circles we will interact more easily'*.

5.2.4 Students' perceptions of their background knowledge

It appears from the data analysis that the students' background in basic Geography skills was poor, and some students needed information technology skills. Poor mastery of skills in Geography can be attributed to several factors, as was shown and discussed earlier.

In addition, most of students saw their knowledge in geography as limited as student (I/26) reported:

'I would say that my knowledge is very limited ... But because these are interesting facts, I have never actually forgotten them ... I have to confess though that there are new and difficult pieces of information which I find too difficult to remember'.

She added that her aim was to pass the exam and to enter university rather than gaining general knowledge itself. This point, however, reflected on the way that students see the knowledge they gained, when she was asked about why she saw her knowledge in this way, she explained:

'I mean that if the goal was to pass the exam and gain a university place, then this would be enough. But if the aim were to gain general knowledge and learning, this would be difficult or even impossible. The proof is that we have limited educational and scientific knowledge'.

Taking this quote further show that students gained new knowledge that they needed and more important increased their communication:

'The fresh scientific and educational knowledge and the new learning style are two things that our school course book has failed so far to offer ... It is still a guiding resource in terms of the subjects we want to study'.

In addition to what was presented above, it might be wise to indicate the teacher's negative role as it was described by participants. Participants argued that the main factor that limited their background in Geography was their teacher. In one important instance, the participants indicated they were not allowed to have discussion groups in the class. In several cases, students' discussion was seen by the teacher as undesirable thing. In the case of students (I/29), she was rebuked by her teacher when she asked her colleague a question on the subject that they were studying:

'In the subject of literature, the teacher was reading a poem from the pre-Islamic era and there was a word very difficult to pronounce, and when the teacher started writing on the blackboard, I asked my friend next to me: what is this word? When the teacher saw me talking to her, she rebuked me'.

Some students saw that the geography itself as a subject that does not need deep understanding and it depends on memorising facts, as in the case of student (I/24):

'Because it is not really a subject that requires deep understanding and constant attention as other subjects ... It is largely dependent on memorisation and is nowhere related to our daily lives ... It bears no significance on our personal development ... I will personally put it behind me once I leave secondary school'.

This attitude can be attributed to the future of view of higher education where geography is not an option to be studied at the university and the current knowledge is just to be memorised for the exams as the same students noted: *'... In fact, this subject is certainly out of my academic options for higher education'. 'I lose all interest in the geography and history subject as soon as the exam is over ... I mean I only study hard to do well in the exam'.*

Some other participants noted that the geography itself was a difficult subject and their knowledge was limited as in the case of student (I/11): *'Really, when I read the book I can't understand things all the time'*. This student's opinion indicates the constant difficulties that students face in developing their knowledge. When (I/5) was asked about her knowledge, she clearly indicated the development of her knowledge which suggests the low level of knowledge she had:

'It provides us with new knowledge and we have our own world now with all freedom to enter and use it in any time. We are responsible now for all what we write and post and our skills had developed and finally our geographical knowledge had increased'.

As the teacher depended on the textbook as the only and main source of knowledge, students saw how their learning was being limited. In her answer about the question of

increasing her knowledge after using the forum, student **(I/19)** clearly indicated to her experience of learning the subject and background knowledge:

'Yes ... I benefited in two ways ... First, the information that we have learned and that we have searched for is quite valuable and is not found in the textbook. Second, it changed my view of the geography subject which I thought was boring and based on memorisation, but now I think it has become a more interesting subject'.

Some students noted that they travel and ultimately their knowledge developed but they were banned from sharing that or using other sources as reported by students in **(F.G/3)**: *'The teacher does not really encourage us to look for different sources.* They could see the difference between what they saw and what is in their textbook. On more than one occasion, the students mentioned their travelling and linked it to Geography:

'When I arrive back from France last summer, I shared some of my information and what I saw and heard with some of my colleagues. Unfortunately I did not have the chance to share it with all students. We stayed in Paris and it was brilliant and I was dying to go back to Saudi Arabia to talk to my friends and mates about it'. (I/2)

Moreover, it appears that most of the students had a poor background, and just used textbooks for exams:

'Can you imagine that most of us do not know some big cities or locations in the country? We should have studied this here and as you can see that we used it just for homework and exam and we forgot everything now'. (I/7)

'I can say that my background was really poor. I mean I suffered with many subjects of geography and that was difficult to understand or memorise. I would say that this weakness of knowledge because geography is difficult to understand and I do not think that I want just to memorise it and then forget it after exams (laugh)'. (I/15)

After the forum, the students seemed to develop their knowledge as a result of sharing information with their peers and interacting. On the other hand, it appeared that the students had basic computer skills, which can be attributed to several factors. First, there was no clear policy of using a computer and the Internet in the curriculum. Most of the students' skills were gained from personal experience and did not match the scientific and practical need for using the forum. Second, most of the students reported that they had limited access to the computer or to the Internet at home and at school:

'Let me be frank here, my father would not let me use computer for long hours. Not just my father but also my mother and two big brothers at home. Here at school, yes there is a computer lab but we do not use it very often for varied reasons. But this all changed after we started using the forum'. (I/8)

In addition, it can be argued that poor knowledge in computer science and use of the Internet on the part of the students can be attributed to a lack of equipment at homes for varied reasons. The students who reported that they did not use computers and the Internet indicated that most of them had computers at home without Internet access. However, this point can be understood from a cultural perspective, where most of Saudi society is conservative and most parents do not know enough about new technology or have it their homes. Student (I/10) explains:

'I have a computer at home but I am normally allowed to use it. We had Internet for short time and I did not learn how to use because of my father. He is very traditional and scared of the new technology. However, all change now'.

Finally, the following can be concluded from interviews and focus group discussions about the students' level in Geography:

'You just asked me why do not I ask my classmates for new information or help to understand the subject. Well, simply they do not know and I cannot blame them. They are on the same level and

have no resources and on the other hand, we rarely chat with each other'. (I/16)

'Geography does not mean anything to me, cannot believe that we still learn in old ways.

-Yes I would love to learn more but I do not want just to 'fill my mind' with stuff without understand it. I do not think Geography should be taught in this way.

-I used to love Geography and know about countries and other cities in my country but from what I can see in the class I do not think I want to know more'.(F.G/2)

'My geographical information was poor'. (I/7)

'I have got to work hard to understand the curriculum'. (I/25)

'If I had not Internet, I would rely on TV to get information'. (I/4)

5.3 Students' perceptions of the forum intervention

Students had their own perceptions of the intervention they received and reported that their view of forum intervention was affected by factors such as their demand and requirements, willingness, and training they received (see figure 5.4).

Students reported that they were craving for a new method to be used with them in order to increase their communication and collaboration and their knowledge. In several cases, participants indicated that the new experience of using the forum assisted them in increasing their knowledge of subjects of geography.

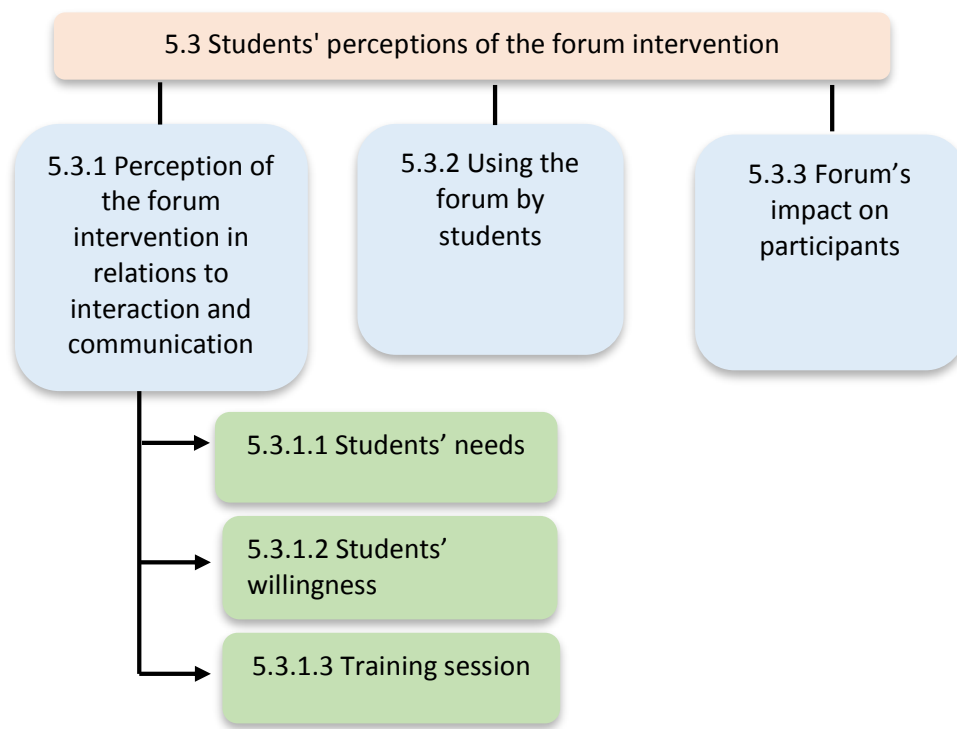


Figure 5.4 Sub-themes of the Students' perceptions of the forum intervention

Interviewee **(I/20)** shared her experience of using the forum after she pointed out the disadvantages of studying geography using traditional methods by her teacher:

'In the forum, however, it is a completely different situation ... First, I am not forced to learn and I am not a listener ... The development from the classroom is that I have become a researcher and responsible for all my colleagues in the forum ... Also, I am not confined to specific information and material set out in the textbook ... I am more at leisure when it comes to choosing what I want to spend time on ... In the forum, we talk to each other, discuss matters, we ask questions and give answers and correct the mistakes of each other. Personally, I love the atmosphere in the forum and I hope this experience carries on'.

The student summarised several benefits of using the forum, but it should be noted that the participant looked at the intervention from a positive perspective. She mainly was craving for a new method that assist her have deep understanding and on the other side to deal with her as participant of gaining knowledge rather than just a receiver.

In addition, students indicated that they learned to depend on themselves and share information with others, as explained by interviewee (I/20): *'Through the forum, I have learned to depend on myself in the search for information, as well as depending on my friends by taking advantage of what they post'.*

This clearly indicates the students' belief, after using the forum, that the forum opened the door widely for them to create knowledge, communicate and work with others, as the same students went further to explain: *'I think that the reason for the success of our participation in the forum lies in working as a group brought closer by one common factor'.*

Additionally, participants saw the intervention of the forum as a space of freedom where they can: *'log in at any time we want and no one can control us' (I/8)* and unlike other forums where there were *'no colleagues to share the knowledge with as we have different goals' interviewee (I/20)*. This indicates the latent desire of students to experience the new method and go further to develop and create their own knowledge.

5.3.1 Perceptions of the forum intervention in relations to interaction and communication

Participants showed their perspectives of the intervention they received by the forum and how that reflected on their communication and interaction. Students showed that they were in need for that intervention. In order to take students' perceptions further for analysis, students' demand for and willingness to participate in the forum should be examined in addition to their need for training. Data analysis shows that there was interaction between students while using the forum. However, this interaction and ultimately this communication started with some skills that students were trained to use by a training programme set by the researcher for one week. The following section sets out the

needs of the students for the forum, their willingness to participate and the training they required.

5.3.1.1 Students' needs

From what was reported above, the students' needs were expressed in an apparent way and it appeared that they had a positive view of the forum. Most participants indicated that they wanted to study and understand Geography in depth, not just for exams, but they had lost interest because of the teacher's teaching method, curriculum, and ban on communication, interaction and collaboration.

Students indicated that they wanted more information, but they could not because of the instruction and discipline in the class and school as reported by (I/14):

'I want to know more about the subject I study and have more information but our textbook is old and our teacher does not give us the opportunity to have any kind of interaction'.

It is apparent that the students need to learn Geography. This can be seen from the above, where the students want interaction and a better way to learn the subject that was presented in a difficult way in their textbook and if they were encouraged as reported by (F.G.3): *'If the teacher had encouraged us to search and read about the different topics that we have to study, we would have increased our knowledge about these subjects'.* Moreover, the students indicated that they have the willingness to share information with each other and learn from each other:

'Yes, I would love to learn and share information with my classmates but how? As you know we (girls) talk so much (laugh) so it would not be strange to cooperate with my classmates. I think your idea [the forum] was absolutely amazing'. (I/30)

To put these desires in action, some students asked their teacher to learn about some subjects in the natural environment, but negative responses from the teacher were waiting for them, as noted by (I/8):

'We suggested that we should have discussion group or take the lesson (desert) out of the class I mean inside the class but unfortunately the teacher said no'.

In order to respond to difficulties created by traditional teaching methods, some students depended on themselves to study some subjects. However, this response depended mainly on using television, and some short communication and interaction with classmates, as reported by (I/15): *'I do like geography although it is difficult to understand. I mean I like to watch television and travel and know about countries and its geography'*. It can be seen that students were looking for another source of knowledge, and their school and teacher failed to provide it.

Finally, students indicated two interesting points about their demands and needs: students wanted to know how to discuss with each other; but students have not tried to find solutions to communicate and interact in the classroom, as they believed that was not their job but rather it was the teacher's job. Students' need for learning Geography appears to be linked traditionally to the role of the teacher and school. In both the individual semi-structured interviews and discussion groups, the students stressed the need for finding a way that allows them to communicate and interact.

- 'they should find a way for learning this difficult subject better than our miss's method.

Researcher -Do not you think that you should find that way?

-Actually we waited for you to present this amazing forum to us. I do not think that is my job that is our teachers' and school's job.

- Yes, I agree with her, why should we do so? It is our teacher's job and she has to do it herself not us'. (F.G/2)

This discussion clearly indicates that students still rely completely on school, and no group initiatives were made. Some individual initiatives can be seen through an analysis of the data, where some students tried to learn by themselves, but it should be noted here that

those attempts were utterly individual and were not followed by any serious attempts from the teacher or classmates.

5.3.1.2 Students' willingness

In contrary to difficulties that face students in their communication and interaction, it appears that those students had a willingness to learn new methods of learning Geography and increase their communication, interaction, and collaboration. Participant **(I/6)** noted that she spent some time with her family in Australia, where she had first-hand experience of differences between what is applied there and her country: *'In Australia they use methods to enable students, from comprehending and understanding and there is an interaction between students and the teacher and the teacher motivates students all the time'*. This, however, was a motivation for students to participate as noted by one participant in **(F.G/4)**: *'In my opinion, I think the forum has been such an inspiration in terms of pushing us to search for information and in seeking to learn and understand the various topics of the geography subject'*. Student **(I/14)** indicated that she wants to share information about some countries that she visited as was shown earlier. In addition, another participant indicated the importance of sharing information with classmates:

'I think that sharing information with colleagues is critical in responding to difficulties that we face with our teacher and the curriculum. I cannot forget that we have been taught in a very traditional way'. **(I/24)**

The students indicated that most of them initially liked Geography and had the willingness to learn more about it. One indicated that she liked the Spanish language, she learned it, and she can do the same thing with Geography:

'I travelled once with family to Spain and I simply loved their language and I insisted to learn it and I did learn some. I love Geography as well although all difficulties I and my classmates face and I can learn it better. I want to learn more, but how?' **(I/4)**

In a vivid proof of their willingness to learn Geography, the following conversation took place in the **(F.G/1)**:

- *'I like Geography and I am up to learn it but there are many obstacles...*

- *Yes, indeed, I am willing to learn it. I remember that I had to take some vitamin C to remember all information that I had to study but it all changed with this forum'.*

Student willingness can be seen from another aspect where all participants show their motivation to join the new forum and train before they start using it: *'I was very nervous and worried about the subject of European countries when it was introduced at the beginning of the school year. I did really want to achieve the best marks' (I/23)*. It was reported by one student that they were glad to hear that this new forum will be applied. From another side, the students expressed their regret that this experience finished when time was passing quickly, unlike with learning using traditional methods:

'Your way was a relief. When I heard about for first time I was 'over the moon'. Yes I was happy and for first time I felt that I would proof my skills and have the opportunity to interact will my colleagues. I have to admit here that time passed so quickly and I did not feel it while it was other way, before we started using the forum'. (I/12)

On the other hand, few students indicated that the traditional teaching methods used by their teacher were more beneficial for them. Indeed, those students believe that the way they were taught was appropriate and benefited them:

'I do not know why my colleagues complain about the teacher. She is fine and she explains everything in the book. Still do not know why they do not like her lesson? Probably they do not understand her but I do. As I said she explains everything in the book'. (I/17).

5.3.1.3 Training session

As discussed in the previous chapter, in order to conduct this study, participants had a one-week training session to learn how to use the forum. Students reported that the training session they attended assisted them in changing their view of the forum as noted by **(F.G/4)**: *'at the beginning or before the training, I expected it was just a routine activity'*. They also reported that training session was critical in facilitating their access to the forum as interviewee **(I/6)** noted when she was asked about logging in and out: *'It was easy to log into the forum and the training week with you was very important'*. However, it appears that participants benefitted from this training session in more than one way. First, some students developed computer and Internet skills.

'In fact my computer skills were poor and I have developed them so quickly. In addition, my Internet skills were very poor; I just heard of Internet and cannot remember that I used it before but now I am ok'.

(I/4)

It can be seen from the above quote that some students had poor technology skills, which was supported by using the newly forum. Interviewee **(I/6)** went further by attributing her success on the forum to the training she received: *'our success in the forum is due to this training, as this develops our skills on the internet and computer'*. Other students developed a current project. In the case of student **(I/14)**, she was introduced to new software and learned new things. This development can be linked with what was already discussed earlier about students' willingness to learn Geography in different way:

'I cannot deny that I have learned new things in my training and using the forum. One of these things was using Windows 8. In fact, I have not used it before and this forum gave me a great opportunity to do so and now I have installed on two of my computers'. **(I/14)**

The students also reported that the training session assisted them in increasing their search on the Internet, and in looking for new things as noted by **(I/27)**: *'I have started searching for new things on the Internet and to be honest I commenced searching more than I used to do'.*

The training session was also reported by participants as a new tool to increase their knowledge of Geography and other materials. However, the students reported that they were able to log in and out of the new forum easily and learn how to add some materials and leave comments, as (I/11) explains:

'This training session was fabulous. I learned a lot of things that helped me to understand the forum and have interaction on it. I have never thought of this and I can tell that it is great and more than I imagined'.

Providing students with the necessary skills was critical in their participation and interaction on the forum. The students who had the training prior to using the forum showed that their ability to use it was as they expected. In several cases, students referred to the training sessions as a critical point of their use of the forum, as (I/20) explains:

'I would not be able to use the forum as I wanted, if I did not have that training. I can say now that this session was very beneficial'.

In addition, students reported that training session assisted them in choosing sites that they can use in order to search for information as noted by participant (I/19): *'After the training session that we had before joining the forum, I became able to differentiate between the accredited sites that we can trust for accurate information and among other sites, such as the Wikipedia site'.*

5.3.2 Using the forum by students

The data analysis indicated that the students used the forum practically from different aspects and they had positive impressions of using it, as reported by participant (I/6) *'I liked the design and I want to design a forum to be my blog in the future'.* However, this use relied on the training session they had prior to using the forum. Indeed, students reported that they felt for the first time that they were allowed to discuss what they wanted at any time, as (I/12) explains:

'When I logged on for first time, I felt a bit scared but then I discovered that we can discuss anything we want. Simply it is our website or forum not the teacher's'.

In addition, access to the forum was available all the time, which allowed the students to log on from their homes.

Another cultural issue was that this forum was exclusive to the female students. As was mentioned earlier, cultural and religious perspectives play a critical role in Saudi Arabia:

'The best thing about the forum is that it was exclusive to the students, I mean the girls, and required a username and password to access. I do not think my family would allow me to access, if they did not make sure that it is safe'. (I/11)

In an interesting point, students indicated that they were responsible for providing information and that information was their responsibility. Indeed, this clearly indicates the desire and willingness that students have to implement the forum and it relies on an alternative resource to learn and to their commitment to their group:

'I felt glad to be responsible for first time in my life. I mean normally we depend completely on our teacher. Now, I brought some stuff and added to the forum and felt that is my work and I am responsible for it'. (I/26)

The students also reported that using the forum assisted in providing them with new knowledge about Geography, and they had the opportunity to exchange information freely.

'I did exchange information with my classmates. In many occasions, I provided information for my colleagues and I received information in turn and received feedback that was fun and it helped me to understand my subject'. (I/13)

The following example, extracted from observation on the forum, figure (5.5 and 5.6) shows the interaction and exchanges in the information between students on the forum and checking the validity of provided information;



Figure 5.5 an interaction on the forum



Figure 5.6 Student checks the information

Observations also show that the interaction between students was apparent. It appears that the forum increased students' interaction by allowing them to leave comments, and their attempts to acquire new information. These attempts can be seen through their ways to encourage each other to search for new information. In one obvious example (Figure 5.7), one participant in the group urged her classmates to be active and to share information with others: *'come on girls, get up and just do it, stop being lazy'*.

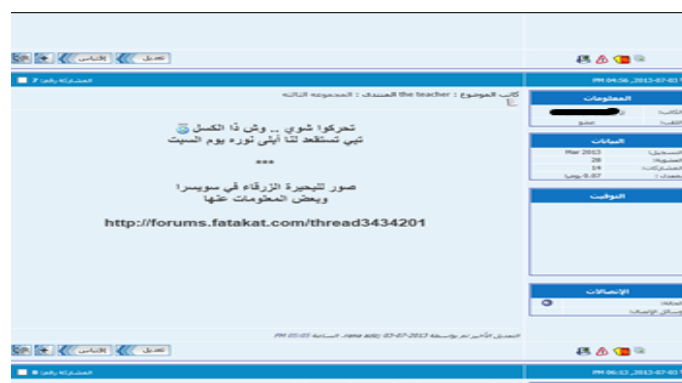


Figure 5.7 Student urges her colleagues to participate

Students also reported that the forum, as designed, was useful and easy to use. In several cases, in either semi-structured interviews or focus group discussions, students reported that they were able to log in easily and use the forum smoothly. This can be seen through the long hours that the students spent on the forum, and the feedback provided by them:

- 'I used to spend three hours at least a day.

-I spent a bit more as it was really useful and fun.

-I had some problem with my Internet connection so I can say that I spent a bit less than you girls. I was I disappointed because of the poor Internet'. (F.G/3)

The participants reported more than one reason that encouraged them to use the forum. First, it was easy to log on at any time and from any place, as reported by students in the following examples: *'I could just click to log on and there was no restriction' (I/30)*. *'This forum was absolutely amazing; I used it countless time because I can use all the time' (I/10)*. Second, the forum design was described as perfect and easy to use: *'the design of the forum was perfect and it very simple and the colours matched together' (I/21)*. Third, it appears that the students had the full access to log on and use the forum without restrictions or difficulties. Precisely, the technical support was available and students had the opportunity to report any difficulties. However, there were no serious technical difficulties reported by the participants, as reported by (I/3): *'we did not have any difficulties using the forum. I think that the training session we had been useful.'* Finally, there was a link between the

design of the forum and the students' studies. Specifically, students reported that the forum design included the icon and the sections that matched with each other and with Geography in general.

5.3.3 Forum's impact on participants

Data analysis showed a major, positive impact of using the forum for the students. This positive impact could be seen through the way that the students responded to using the forum. First, the students responded positively to the training session and participated actively. It can be reported that all students participated in the training session. Second, the students encouraged each other to participate in the training session and on the forum:

'I have been encouraged by some of my classmates who I know in general to participate in the training and the forum. I was honestly hesitant to participate but I was encouraged by my colleagues and I am happy I participated'. (I/9)

The students also reported that they were encouraged by their classmates to be active on the forum by adding information or leaving comments, as shown in the above section. The students also built a rapport with each other on the forum. Some extracted quotes clearly indicate this point:

'I know my colleagues better now as I interacted with them on the forum. I mean when I used to post or comment, I had the chance to leave some personal comments and I received others in return. It was nice to know and joke with someone who you have never had the chance to talk too'. (I/21)

In a practical impact, the students started to talk in the class and school about the forum, and more about their social life:

'The students I knew through the forum, I know them more and now we started having our lunch together and talk about many things.

Yes we talk about our study and the forum but we also talk about stuff, you know “girls’ stuff”’. (I/13)

The students also reported that the forum gave them the full opportunity to communicate and interact with their colleagues. Communication started virtually through the forum, and then moved towards face-to-face interaction. When the researcher asked the **(F.G/3)** about their actual interaction, they responded as following:

-‘actually we did not have real interaction and that was also when we started using the forum.

-yes that is true but everything changed after that.

Researcher: *can you tell me more about this change?*

- we did not use to chat with each other before but we started talking and leave comments and discuss what we did last night in the morning. We started knowing each other better and talk about our families and hobbies and you know other stuff’.

It appears that the forum allowed all students to participate and interact. In another interesting finding, the students indicated that a student with special needs participated actively on the forum.

‘I did not think that I can participate because of my disability. After the training session I discovered that I could participate. When I started using it I discovered that I could do it. I could have participated while sitting on my wheelchair’. (I/18)

In the case above, the student participated in the activity, although she thought that her disability would hinder her participation. In her case, she participated actively and felt that she was be part of her group. One of her colleagues explains: *‘I was surprised of (...)*

interaction and participating on the forum. I mean she did not used to chat or participate in any activity in the class. All that changed with the forum where you can see that she was very active.'

However, being with others on the same task assisted her in increasing her self-confidence. That was expressed directly by (I/22): *'I truly believe that she was confident and wanted to participate more, if she has opportunity'.*

The forum assisted in increasing students' search skills. In many cases, students reported that they were able to search for new things and enrich their knowledge:

'The forum opened new windows for me. I started chatting with classmates who I barely said good morning to before and also helped me search for more things. I have never thought of things and discovered that I can read about it online and report to my classmate'. (I/8)

Moreover, the students learned to check the validity of the information on the forum, especially the new information that is not in their books. From that point, the students reported that they found new information, and this information was checked by them; a discussion about it took place about the population of Switzerland (figure 5.8):



Figure 5.8 Information provided by student

The students also reported that the forum assisted them in reducing their anxiety when studying the subject. More than one participant indicated that they faced difficulties in Geography, and the forum assisted them:

'I faced many difficulties in Geography and I could not understand and I do not think that it wise idea to ask my father to bring me a private teacher. But thank God as the forum assisted in solving these difficulties. I used to post questions and I received answers and explanations. Later when I got to know my classmates better I started chatting with them about Geography and they were very helpful'. (I/28)

This collaboration between students as result of using the forum was also extended outside the school, where students started having some time together talking about private things, as mentioned above. However, the main benefits reported by students were in understanding the subject of Geography, and increasing communication and interaction, as student (I/2) said: *'I thought that some of my classmates were arrogant as I did not know them well but now I discovered that they are not'*. Moreover, one participant (I/20) indicated that she knows all of the students after using the forum: *'would you believe that I know everyone's name now'*. However, this benefit went beyond what was expected, as participant (I/25) explains: *'from what I learned on the forum, I can suggest some countries for my family to go for vacation in the summer'*. In another case reported by one of the students, she indicated that she changed her mother's attitudes by using the forum. This particular student did not participate initially, as her mother refused to agree to allow her to do so. After three days of implementing the forum, the student wanted to participate as she heard her colleagues talking about it all of the time. Eventually, her mother allowed her to share and log onto the forum when she found out that the forum is private, safe, and that her daughter would benefit from it.

It should be noted here that conservative powers still resist new technology in the hands of their children. In the case above, the student described her experience with her mother:

'I have told my mum about your research and the forum. Her first reaction was simply no, you are not allowed to participate or use it. She thought that I would be interacting with boys. However, I kept watching what was going on the forum without any real participation. It took me some time explaining and persuading her to let me participate after we logged on together and she saw the content. Luckily she eventually agreed'. (I/14)

The following quote, provided by participant **(I/27)**, concludes the impact of using the forum on students: *'we get into this forum at any time with no pressure. In this wonderful environment learn, enjoy and interact with each other.'* It could be concluded in this part that the forum assisted the students in socialising and knowing each other better, increasing their geographical knowledge; it is helpful to use the forum as a reference to which they can refer at any time. The following quote, provided by **(I/3)** summarises how students were encouraged to provide the forum with new information: *'Every single time I was thanked by my colleagues I felt that I need to search more and provide more information. I was encouraged that it paid off for them'*. While student **(I/19)** went further by expressing her feelings when she was mentioned in the forum: *'I was extremely happy when I participated and was mentioned by my colleagues. I felt that I was useful and like I first time I participate in geography classes'*.

In another vivid example, student **(I/19)** indicated that using the forum changed her view of Geography extracted from the book:

'After using the forum I realised that Geography is more than climate and borders. We have been taught for years that Geography is all about climate, mountains and seas. No, I just realised that Geography is like seeing another country in front of you and it is strongly linked to daily life. Internet provided us with up-to-date

information and this geographical information can be changed anytime’.

Figure 5.9 indicates a girl informing the other students of the best time to visit Switzerland.



Figure 5.9 One student provides information about Switzerland

A clear impact of the forum on the students that also indicates that they were participating, communicating, and interacting, the students logged in, posted and commented regularly during their vacation (one week) and during the weekends (Thursday and Friday). One student (I/22) moved away during the vacation to live with her grandmother where no Internet access was available: *‘I phoned my father from grandmother's house and asked him to provide me with Internet access in order to use the forum as the forum became part of my life and luckily he agreed’*.

Figure 5.10 shows that some students have been logging in during their vacation and on the weekends, and one of them posted (good morning girls, is there anyone sleeping on the weekend, wake up)



Figure 5.10 student invites others at the weekend

The students reported that they had previously waited for the weekends in order to stop studying. When they commenced using the forum, they reported that they participated more in the forum, and that can be proven through following their participation over the weekends.

In an interesting case, student (I/5) reported that she could not access the forum on the weekends as she used to because of her travelling back to her village to stay with her family;

‘I used to travel to see my family in our village and there was no Internet access and when I back at the beginning of the week I could see that there was much participation by my classmates. I felt frustrated as I could not participate and could not catch up with what was posted’

Figure 5.11 shows how one of the students posted (hi girls, how are you? I miss you,, I am sorry I couldn't logon because the internet does not work in home , but thank god it is work now).



Figure 5.11 Student apologies for not being in contact

5.4 Students' reaction to the forum

This section considers the third research question about how students reacted to the forum, how much it was used, what it was used for ('on task' versus 'off task' activity) and how the forum developed features associated with Communities of Practice.

Data analysis shows that the forum was utilised regularly by participants. In this theme, to answer the first part of the third question about how much the forum was used by the participants, discourse analysis was used. SOLO taxonomy pedagogic framework was used to answer the second part of the question, what the forum was used for (on task versus off task activity) and thematic analysis was used to discuss how the forum developed features associated with Communities of Practice, as shown in section 5.5.

5.4.1 How much is used

The following table shows how the forum was constantly used by students on educational tasks that were provided to the students where discourse analysis was used.

Table 5.1 the discourse analysis table

	Group 1	Group 2	Group 3	Group 4	Group 5	Total	Average
Number of students	6	6	6	6	6	30	
Information	17 (17) (13)	27 (17) (21)	25 (17) (20)	42 (23) (33)	13 (12) (10)	124	25
Reply	27 (27) (16)	38 (24) (23)	24 (17) (14)	43 (23) (26)	29 (27) (18)	161	32
Confirmation	7 (7) (11)	20 (12) (33)	13 (9) (22)	12 (6) (20)	7 (6) (11)	59	12
Reply to reply	9 (9) (10)	18 (11) (20)	13 (9) (14)	22 (12) (25)	25 (23) (28)	87	17
Reply to extended Information	5 (5) (8)	15 (9) (25)	16 (11) (27)	14 (7) (24)	8 (7) (13)	58	12
Queries/questions	9 (9) (24)	6 (3) (16)	8 (5) (21)	9 (5) (24)	5 (4) (13)	37	7
Social interaction	23 (23) (15)	31 (20) (20)	42 (29) (27)	38 (21) (25)	18 (17) (11)	152	30
Total	97	155	141	180	105	678	

**X (Y) Z: X is the raw figure, the total number of activities, Y is the percentage activities of the total number of articulations of the group, and Z is the percentage activities of the total of that type of activity across the 5 groups.*

***Percentages between brackets above were calculated through dividing the activity on the total of the group in first bracket and on the total of all groups in the second bracket.*

Discourse analysis indicates that the forum was constantly used by students on educational tasks that were provided by their teacher. The 30 students were distributed equally into five groups (six students in each). Data analysis indicates that the highest level of overall engagement across all groups was by Group 4 (180), while the lowest level of overall engagement was by Group 1 (97).

However, participants used the forum on seven domains: 'information'; 'reply'; 'confirmation'; 'reply to reply'; 'reply to extended information'; 'question's; and 'social interaction'. Specifically, data analysis indicates that Group 4 was the highest group provided information with 42 pieces of information with 23% compared to other activities in the group and 33% times compared with the total for that activity across the groups. The lowest was Group 5 with 13 times with 12% compared to other activities in the group and 10% times compared with the total for that activity across the groups.

Based on these figures, the 'reply to information' that was provided was the highest within Group 4 with (43) replies with 23% of times compared to other activities in the group and 26% times compared with the total for that activity across the groups. The lowest one was Group 3 with (24) replies with 17% of times compared to other activities in the group and 14% times compared with the total for that activity across the groups. This clearly indicates that the information that provided by participants in first place had its resonance in reply where providing information on the forum reflected on the replies. It should be noted here that replies varied through groups that had low information as in Group 5 (13 pieces of information and 29 replies) and Group 1 (17 pieces of information and 27 replies).

'Confirmation on information' and the subsequent replies provided varied. For instance, there were seven confirmations in Group 1 and Group 5 had the lowest number of confirmations with 7% compared to other activities in Group 1 of times compared to other

activities in the group and 11% times compared with the total for that activity across the groups and 6% and 11% in Group 5 respectively, while the highest was Group 2 with 20 confirmations (12% compared to other activities in the group and 33% compared with the total for that activity across the groups).

The number of 'reply to reply' (i.e. conversations building on initial replies) provided by participants also varied, with the highest number in Group 5 (23% compared to other activities in the group and 28% compared with the total for that activity across the groups), while the lowest number was Group 1 (9% compared to other activities in the group and 10% compared with the total for that activity across the groups).

The number of 'reply to the extended information' was highest within Group 3 (11% compared to other activities in the group and 27% compared with the total for that activity across the groups) and lowest in Group 1 (5% compared to other activities in the group and 8% compared with the total for that activity across the groups). In the 'queries/questions' part, Group 5 was the lowest participation with five participations (4% compared to other activities in the group and 13% compared with the total for that activity across the groups), while Group 1 and Group 4 were the highest (9% and 5% respectively compared to other activities in the groups and 24% compared with the total for that activity across the groups).

It appears that 'social interaction' was the highest usage of the forum. The highest participation was by Group 3 with 42 participations (29% compared to other activities in the group and 27% compared with the total for that activity across the groups), while the lowest was Group 5 with 18 participations (17% compared to other activities in the group and 11% compared with the total for that activity across the groups). Groups 1, 2, and 4 had 23, 31, and 38 participations respectively. The total participation of social interaction was 152 with an average of 30. In general, the average numbers of 'reply' and 'social interaction' were approximately 32 and 30 respectively. In total, the numbers indicated that the forum was used 678 times by the groups with an average of 135. Group 4 appeared to be the group that used the forum the most, while the lowest usage was by Group 1.

As the above analysis indicates, the use of the forum by the 30 participants varied between groups. 22 participants used the group constantly, while eight students appeared to use the forum less often than their peers. Those students who used the forum less than their colleagues indicated several reasons that affected their usage, which they reported in the interviews. For example, (I/5) reported that the illness of her mother stopped her of using the forum temporarily: *'There were circumstances for two days, my mother was ill but afterwards all was good'*, while others had difficulties using access to the forum from home, which was the case for participant (I/12): *'At the beginning I had because I didn't know how to use the internet but then I learned'*. Some other students, as in the case of student (I/13), did not have access to Internet from home: *'Because we don't have internet in home'*. Some students did not have any difficulty accessing to the internet or the forum but did not have more than one computer at home, as student (I/14) noted: *'Two reasons, my mother rejected the idea and my brother and sister have exams and they use the net and I couldn't use it through my mobile'*.

In one case, participant (I/16) reported that she interacted on the forum just for few times as she was new to the class and did not know her colleagues in the group: *'Because I am from Syria and there is a war in my country and I moved to Saudi Arabia and until now I did not adjust with my colleagues'*. Finally, one student (I/17) reported that she objected fundamentally to using the Internet, although she participated in the training session and accessed the forum: *'I don't like to use Internet and this is new and I never use it in school or at home'*.

5.4.2 Usage of the forum

The forum was designed to be used by participants on the following five educational tasks of geography that are in the 'Europe' unit in the curriculum: location and area; climate and plant; surface; population of Europe; and European economy. These tasks, however, were chosen by the teacher, a point made to avoid any contradiction or conflict between applying the forum and the teacher's work with her students.

Using SOLO taxonomy was useful in analysing the data that emerged from observation. In SOLO taxonomy, there were five stages used to observe participants' outcomes. These stages were prestructural, unistructural, multistructural, relational, and extended abstract (as shown in the table below 5.2 and appendices 7, 8, 9, 10 and 11).

Table 5.2: An example of SOLO Taxonomy: first group

Group 1	Learning outcomes				
	Prestructural	Unistructural	Multi-structural	Relational	Extend abstract
Learning objectives					
Forests in Europe	<p>-What is the largest forest in Europe?</p> <p>-I tried to find out the answer, but I could not,</p> <p>-I do not have any idea.</p>	<p>- Białowieża forest in Poland, is the largest forest. Can you make sure that this answer is correct?</p> <p>Because I am not sure.</p> <p>- Forests cover approximately half of the size of Europe.</p>	<p>- It is the forest which is located in the north of Russia. It is not only the largest forest in Europe, but it is the largest forest in the whole world. It occupies 25% of the total forest area of the world.</p> <p>- Most of the forest trees of central and southern Europe were logged off, while of</p>	<p>- There are forests of evergreen broadleaf trees, in general, on the shores of the Mediterranean. These types of trees, which include cork trees and olive trees, do not lose their leaves in the summer time. Many of these trees have leaves covered with</p>	<p>-These trees are considered to be the main source for timber and paper industry in the continent. European governments regulate logging to protect forests from disappearing.</p>

			northern Europe still retains its large forests.	wax to helps them retain moisture well.	
Tundra region and highlands	<ul style="list-style-type: none"> - Are there any heights in Europe? - What are the most important mountains in Europe? - Are there any high peaks covered by snow in Europe? 	<ul style="list-style-type: none"> - It is characterised by cold climate. - It is treeless. 	-Tundra region and the highlands are characterised by cold climate and treeless. They cover most of the area near the coast of Europe, which overlooks the coast of the Arctic Ocean.	- Tundra region and highlands are characterised by cold climate and treeless, and they are treeless, because the water freezes on the surface of the ground in this area most months of the year.	- Water freezes on the surface of the ground in this area most months of the year. When the ice has melted, which has a height of between 30cm and 60 cm during the short summer time in the Arctic, it leaves behind ponds and swamps, where tundra covers, in this season, algae, small shrubs, wild flowers and lichen. Farmers use parts of the tundra and high mountains as pastures for their livestock.
	-Is Europe bigger than Asia and America?	- Europe is a piece of land known as Eurasia.	- Europe covers about 10,180,000 square kilometres (7.1% of the	-Eastern border of Europe with Asia continent lies along the Ural Mountains,	

<p>Where is Europe located?</p>	<p>- Why is it called Europe?</p>	<ul style="list-style-type: none"> - Europe is one of the seven continents of the world. - Europe is relatively a small continent compared with the rest of the continents. - But Australia continent is smaller. - The term 'Europe' is originally derived from the Greek words, which mean 'a broad face'. - Geographically, Europe is considered to be a subcontinent or a large peninsula. 	<p>Earth's surface).</p> <ul style="list-style-type: none"> - Eastern border of Europe with Asia continent lies along the Ural Mountains. 	<p>while the border with Asia to the southeast is the Emba River, which is considered to be the boundary between the two continents.</p> <p>- Because of the differences on determining the distance of the width or the length of (the border in other words) Europe continent, the results of determination of the geographical centre of Europe is of a big difference.</p>	
		<p>- Steppes regions are vast-open grasslands without any kind of boundaries or barriers.</p>	<p>- In Europe, there are two types of steppes regions. One of them is called steppe, while the other one is called the</p>	<p>- The steppe region covers the area which stretches from the lower Danube region to the European part</p>	<p>- The other steppe region covers a large area of the Great European Plain and the middle part of the European sector of Russia.</p>

Steppes Regions In Europe		<ul style="list-style-type: none"> - Where grasses grow in abundance more than any other plants. - In Europe, there are two types of steppes regions. 	Great European Plain.	to the southwest of Russia and the west of Kazakhstan. The other steppe regions cover a large area of the Great European Plain and the middle part of the European sector of Russia.	
Republic of Bosnia and Herzegovina	<ul style="list-style-type: none"> - Where is Bosnia and Herzegovina located? 	<ul style="list-style-type: none"> - It is one country of the former Republic of Yugoslavia. - It is located in southern Europe. - It is a landlocked country. 	<ul style="list-style-type: none"> - It is a country in south-eastern Europe located on the Balkan Peninsula. 	<ul style="list-style-type: none"> - The mountains lie in the middle and the south of Bosnia, and the hills lie in the northwest, while the northwest of the country are flat. Bosnia is considered to be one of the largest geographical areas that have a moderate continental climate, where it is hot in summer and cold with snow in winter. 	
	<ul style="list-style-type: none"> - Where is Finland located? 	<ul style="list-style-type: none"> - Their people are called Finnish. 	<ul style="list-style-type: none"> - Its capital is Helsinki, and they speak 		

Finland	- I have no idea, but it might be in Europe.		<p>Finnish and Swedish languages.</p> <p>- It is the northernmost country located in the Alvenuskandah region in northern Europe.</p> <p>- It is bordered by Swede in the west, Norway in the north, Russia in the east and Estonia, via Gulf of Finland, in the south.</p>		
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In the pre-structural stage, participants were given the task by their teacher and had little information about the task, with no connection between these sets of information. The first group is used as an example to present the findings. Students posted on the forum posts that indicate the pre-structural stage. In the first unit, students provided questions that show that they had some information about forests in Europe while this information was not connected to anything beyond the fact: *'Peace upon you. Good interaction. I have got a question: what is the largest forest in Europe?'* as shown below in the figure 5.12

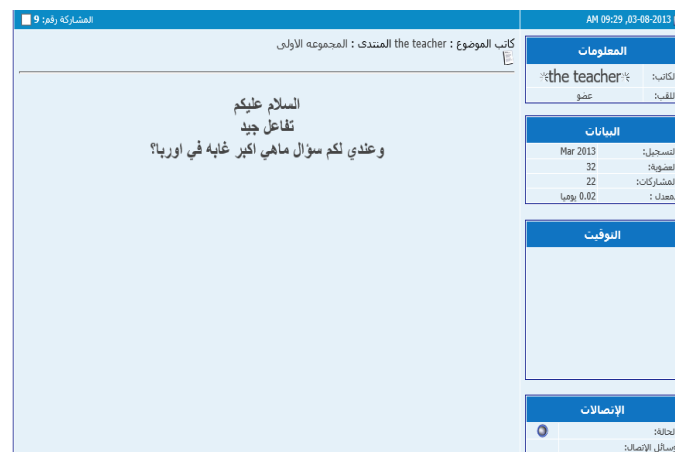


Figure 5.12 Pre-structural stage

In the second stage, students moved from prestructural to unistructural, where participants commenced making some simple connections but these connections still needed some work. Students provided replies and comments such as: *'Białowieża Forest in Poland is the largest forest. Can you make sure that this answer is correct?'* In this stage, students appeared to be sure of the information they provided and were looking for confirmation of what they provided, as shown in figure 5.13, where one participant posted that she found that Białowieża Forest in Poland is the largest forest and asking her colleagues to confirm her post:

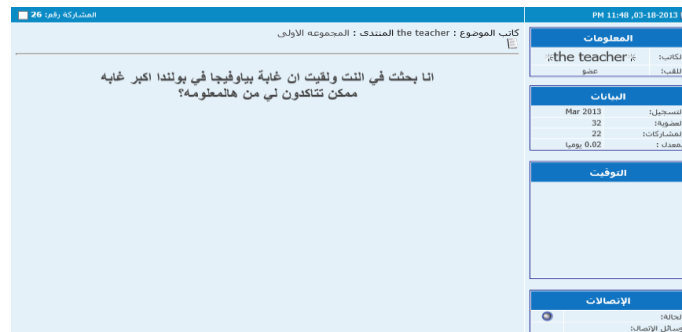


Figure 5.13 Unistructural stage

Elsewhere, one student provided a piece of information: '*Forests cover approximately half of the size of Europe*' (Figure 5.14)

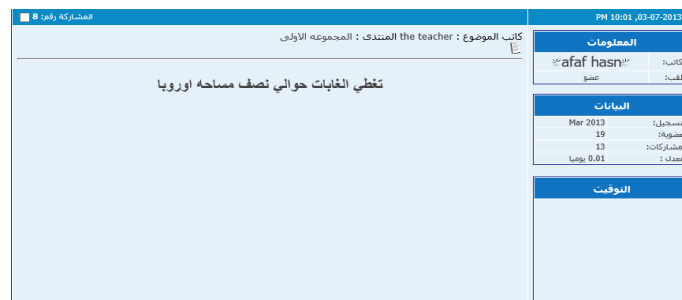


Figure 5.14 Unistructural stage

Students then went further by moving to the third stage (multi-structural) where connections were made by participants but with no meta-connections. So, relating to the task (forests in Europe), students provided posts and replies such as: '*there is a forest which is located in the north of Russia. It is not only the largest forest in Europe, but it is the largest forest in the whole world. It occupies 25% of the total forest area of the world. Most of the forest trees of central and southern Europe were logged off, while northern Europe still retains its large forests*'. These answer show that students had some information and made connections between them but did not reach the point of making meta-connection between them, as shown in Figure 5.15.

المشاركة رقم: 19

PM 04:32, 03-09-2013

كاتب الموضوع : the teacher المنتدى : المجموعة الأولى

المعلومات

الكاتب: bnader saleh
عضو

البيانات

Mar 2013	التسجيل:
27	المدة:
6	المشاركات:
0.01 يومياً	بعض:

الوقت

الإصلاات

الحالة:
وساى الإصلا:

مشكوره عفاف على التشجيع
ويعطيك العافيه على تقاعك ..
اهلين استاذتنا ان شاءالله تكونين بخير وعافيه
بالنسبة للسؤال
في غابه في شمال روسيا وهي ليست اكبر غابه في اوربا بل اكبر غابه في العالم
وتحتل من مساحة الغابات في العالم 25%
بنات تأكدوا من الإجابة منب واثقة من صحتها

Figure 5.15 Multi-structural stage

In the relational stage, participants went further by looking for the whole piece of information and appreciated the importance of it as a whole. This can be seen through the replies to the initial reply and replies extended to information. Participants provided the following post (see figure 5.16):

'There are forests of evergreen broadleaf trees, in general, on the shores of the Mediterranean. These types of trees, which include cork trees and olive trees, do not lose their leaves in the summer time. Many of these trees have leaves covered with wax to help them retain moisture well'.

المشاركة رقم: 15

PM 12:05, 03-08-2013

كاتب الموضوع : the teacher المنتدى : المجموعة الأولى

المعلومات

الكاتب: afaf hasn
عضو

البيانات

Mar 2013	التسجيل:
19	المدة:
13	المشاركات:
0.01 يومياً	بعض:

الوقت

وتوجد في المناطق الوسطى والجنوبية من أوروبا غير السوفيتية بعض الغابات ذات الأوراق العريضة. وتتألف هذه الغابات بصفة رئيسية من أشجار لها أوراق عريضة ومسطحة تتساقط في فصل الخريف. وتشمل هذه الأشجار شجر العرمان والزان والبتولا والدردار والقيقب والبلوط. توجد أيضاً في المناطق الوسطى والجنوبية الغابات المختلطة التي تتألف من الأشجار ذات الورق الإبري، والأشجار ذات الورق العريض. بالإضافة لذلك نجد في هذه المناطق غابات الورق الإبري التي تغطي سفوح الجبال العليا، وتوجد غابات ذات الأوراق العريضة دائمة الخضرة بصفة عامة على سواحل البحر الأبيض المتوسط. والأشجار من هذا النوع تشمل شجر القلن، وشجرة الزيتون، وهذه الأشجار لاتفقد أوراقها في فصل الصيف. لكثير من هذه الأشجار أوراق متينة مكسوة بالشمع مما يساعدها على الاحتفاظ بالرطوبة بصورة جيدة.

Figure 5.16 Relational stage

In the last stage, students moved to the 'extended abstract', where students in the forum went beyond concentrating on the subject and commenced with making connections, transferring the ideas and principles that they gained into a specific subject or question. Students in the subject of 'forests in Europe' went beyond the subject and made connection

between information of the subject and went to extended it: 'Most of the trees have been cut in central and southern Europe while forests in the northern Europe still retains its trees. Northern Europe forests, called the boreal forest, has forest leaves needles. It mostly consists of conical trees, called evergreen conifers or which have a needle-thin leaves. Conifers include: fir and larch, pine and spruce. These trees considered to be the main source for wood and paper industry in the continent. European governments have regulated logging to cut trees to protect them from extinction' as shown in Figure 5.17 below.

المشاركة رقم: 14

PM 12:04, 03-08-2013

كاتب الموضوع : the teacher : المنتدى : المجموعة الأولى

الغابات

لقد تم قطع معظم أشجار غابات وسط وجنوبي أوروبا، أما شمالي أوروبا فما زال يحتفظ بغاباته الواسعة. وتسمى الغابات الشمالية بالغابات ذات الأوراق الإبرية. ويتألف معظمها من الأشجار المخروطية التي يطلق عليها اسم الصنوبريات أو دائمة الخضرة. ولهذه الأشجار أوراق إبرية رفيعة. وتشمل الصنوبريات، التنوب والأرزية والصنوبر والرائينجية. تعد هذه الأشجار المصدر الرئيسي لأخشاب البناء وصناعة الورق في القارة. وتقوم الحكومات الأوروبية بتنظيم قطع الأخشاب لحماية الغابات من الزوال.

المعلومات

الكاتب: afaf hasn
عنوان:

البيانات

Mar 2013	المسجل:
19	المضيفة:
13	المشاركات:
0.01 يومياً	بمعدل:

التوقيت

Figure 5.17 Fifth stage extended abstract

5.5 Students' reaction to the forum in developing features associated with Communities of Practice

As Communities of Practice exists wherever there are several participants or people that share some conditions and aim to achieve same goals, data analysis clearly indicates that there was an apparent change in students' communication and interaction after using the forum. It was reported by participants that they did not have the opportunity to get to know each other in a proper way in the traditional classroom setting, and that has changed dramatically after using the forum. Participants indicated the limited communication and interaction they had before using the forum, as in the case of interviewee (I/30) when she was asked about her communication with her colleagues before the intervention:

'Sometimes, we only meet to look at the homework. For example, I may ask a classmate about a particular question ... We sometimes ask each other about the important lessons to revise for the exam so that we are well-prepared'.

This limitation was seen by the students as a result of several obstacles they faced. It appeared that their communication and interaction was strongly linked to the exam rather anything else as reported by participant (I/28):

'We are not accustomed to opening discussions about the geography lessons ... What normally happens is that we get together a few days before the exam and if one of us is not quite sure about something, then she would ask for assistance ... But, this only happens when an exam is a few days away'.

It appeared that there was not any kind of encouragement from any party to communicate between the students. Rather, students looked for some alternative method to communicate. This, however, assisted in creating small groups between students to socialise together: *'before the forum we did not know each other and every two or three students used to have their own group and talk to each other. All changed now' (I/7)*

The relationship between most students prior to using the forum was exclusive to greetings. Most students reported only saying 'good morning' or 'Assalam Aliukum' in the morning, taking into account that greeting using words such as 'Assalam Aliukum' is obliged by Islamic perspectives that rule the country, and in many occasions there were no greetings, as reported by participant (I.30):

'I did not really know my classmates very well. I just used to say good morning when I arrive as I did not even know their names. As you know, our teacher leads the class and she is the only who talks and she rarely calls anyone. After participating in the forum we started to share thoughts and work together on our homework and understanding our subjects'.

The students also followed the same pattern during the break times, where students who knew each other would gather in small groups and have their breakfast. It was common to see three or four students or fewer in some cases, gather together, as **(I/10)** noted: *'I used to have my breakfast alone and no one was around as I did not know any of classmates'*.

In some cases, the teacher did not give even those who had a health condition time to talk as it appears in **(F.G/5)**:

'There is no interaction... On the contrary, interaction in the eyes of the teacher and the school administration is a kind of misbehaviour and shows lack of education... I have already been told off by the teacher when I asked a colleague of mine about a word I could not hear during the lesson... I was not feeling well because of a cold and was seated at the back row in the classroom... My teacher said that if I wanted something, I had to ask her or keep quiet until the end of the lesson'.

It can be concluded here that there was poor communication and interaction between students for various reasons and most of these factors indicate that the students had the desire to interact with each other with no encouragement from the teacher or the school. This can be linked to what was discussed above in this chapter, where the school's discipline system and the traditional role of the teacher hindered student interaction. By using the forum, several things changed, as **(I/25)** explains: *'when I commenced using the forum, I thought there is something different. For first time in my school life I arrive happy to the school'*. In addition, students reported that they had the opportunity they were looking for to learn differently as reported by **(I/19)**: *'The group environment provides so much motivation to learn more'* where Communities of Practice occurs when the group's members have the same conditions and goals.

As a community of practice is more than a group of people with shared interests, participants felt that something was changed, and for first time they interacted and had the opportunity to communicate and learn Geography in a different way. The students reported that they made friends through interacting on the forum: *'Yes, I made some friends with*

classmates who I have never spoken to' (I/15). Moreover, students felt that they entered a new experience as reported by participant **(I/22)**: *'At first, I was not really that excited to take part ... I only wanted to be with my colleagues for the sake of it. Ever since I joined, I have never stopped using it. It was such an enjoyable experience'*. Participants saw using the forum as an enjoyable experience that they can benefit of it.

On other occasions, students started to interact regularly and discuss some private issues and make regular phone calls: *'I start talking to them regularly on the phone and by emails' (I/4)* and were involved in the social life: *'We would spend longer with each as we sometimes go for hours every day... This was really interesting and quite new to us... But for me personally, I soon became part of their social life'* as reported by participant **(I/30)**.

In the school, the students expressed their feelings towards their classmates or new friends, and they started engaging in some activities together:

'Well, we have our breakfast together all the time. We also exchanged our phone numbers and talk all the time. I have invited them also to my house and my mother cooked us a lunch on Thursday. It was absolutely amazing to have them around'. (I/18)

In **(F.G/4)**, students indicated the way that their characters changed:

- 'I started chatting with all people I know and in many cases I was described as 'talking so much girl' (laugh)

- Me too but I also started thinking from different perspectives about everything, I mean I do not accept any information or thing without verification.

- I just discovered that I need to know more about the world and travel a lot. I want to know my colleagues more and participate in their activities'.

The sentence 'I missed you girls', was common on the forum. The students showed that there is a kind of special relationship between them, and this can be seen from figure 5.18. It shows that the students were talking to each other and told each other how they miss each other; one student wrote about how bad she felt when she did not have an Internet connection.



Figure 5.18 Student welcomes other students

Moreover, in a vivid example, participants from **(F.G/5)** provided an example of the benefit they derived from the forum:

'I agree with my colleagues ... In the forum we were more positive and forward-thinking ... We had so much energy and our activities increased ... I genuinely believe that we have succeeded in building a geographic student community using the forum ... You can actually see for yourself how interacting we are in that forum'.

The group agreed that they built their own community of geography and their way of thinking has changed. It should be noted here that the students started knowing each other during the training session, and they felt confident while using the forum:

'In the training session I did not know everyone or most of them but that all changed when I started working on the forum. In the beginning I was a bit shy and did not know what to do or what to

add. I just kept watching posts by others but then I started leaving comments until I built some confidence and started chatting and interacting. Yes, it helped me a lot in building confidence and I felt that I can participate actively'. (I/27)

From an academic standpoint, it was interesting to see the students reported that they achieved progress and used the forum to assist them to understand their subjects. In many cases, the students increased their knowledge in Geography, which was due mainly to their participation in the forum. Specifically, students in this stage aimed and achieved sharing resources, developed their practice through methods such as problem solving, identifying gaps, or requesting information as reported by participated **(I/22)**: *'I would read the posts my colleagues leave on the forum and then discuss some of it in the school'.*

Students reported that they participated in joint activities on the forum. Most of these activities included providing information, answering questions, and leaving comments. However, these comments concentrated mainly on homework and learning new information. This information was discussed in-depth between students in the forum. The students concentrated on finding new information and sharing it with the group *'I developed my skills and increased my geography knowledge (I/21)*. Those who received that information interacted in various ways: **(I/11)**: *'I prefer to study with a group because they help me to understand more and study more. But when I am alone I study certain things mentioned in the book, with the group I can study everything'.*

The student interactions demonstrate the way that the forum was used for social interaction between the participants, as shown by students from **(F.G/5)**. Although this use was noticed in some comments, the main concentration was on discussing geographical information. In several cases, the students concentrated on one activity, as shown in figure 5.19, where the students focused on gathering information about the population in Vienna.

'On the contrary, in the forum, we are a team and right at the centre of attention as we are all involved in the learning process ... We all have a common goal and aim to achieve it with team spirit ... I personally felt that it was my first ever time I took part in some kind of curricular-based activity that had been built surrounding us and we actually showed so much zeal and determination in making it a collective space... It was through our collective efforts that we managed to read and write, as well as ask and discuss matters, unlike the classroom where the teacher occupies that centre stage'.



Figure 5.19 One participant provided about Vienna

Participant **(I/28)** indicated that she and her colleagues had more time to '*discuss and share stuff in the forum*' where they did not have the time in their class. This discussion was in a new environment '*we have never been introduced to a similar environment*'. This benefit was seen by participants from an academic perspective '*It is not only interesting and entertaining but also a useful learning tool*' where students were '*sharing and helping each other understand and gain access to information*'. In addition, participants reported that the forum created a sense of accountability to a body of knowledge when they '*have taken advantage of the plenty of time available for us to post questions or leave responses to questions*'.

Participants went through stages where they developed the features associated with Communities of Practice. Firstly, they had access to the forum, although they faced some difficulties and obstacles. Secondly, participants built their online identity where they joined the groups and commenced socialising with their peers. Thirdly, students started exchanging information on the forum. This exchange was through posting, commenting, replying, reply to reply, reply to extend and social interaction. Fourthly, students started constructing their knowledge in geography.

5.6 Conclusion

Learning does not depend on how many hours a student spends studying; rather, it is a combination of *what* the learner actually learns and *how* the learner learns. The current study revealed that students had previously suffered from poor communication, interaction, and collaboration and that was strongly linked with their classroom experience inside and outside the classroom. Several factors have been shown to hinder students' interaction in geography class. These factors were mainly linked to the educational system and the school's disciplinary system. In addition, these factors hindered students from developing their knowledge in geography.

Intervention by the forum was seen as positive by participants who showed that there were some demands and positive willingness to participate in this forum after undergoing training which allowed them to develop and create their knowledge. It can be concluded that the impact of the forum was positive from students' perspectives. This impact, however, was seen through the features of community of practice that students developed after using the forum and the way that participants express it before and after using the forum.

In summary, the findings of the current study answered the research questions as follows: Regarding the first research question about students' perceptions of their current classroom experiences, the findings reveal that students perceived they had poor communication, interaction and collaboration inside and outside their classroom; this poorness was attributed to several factors, such as teaching methods and the physical environment of the class. In addition, students reported that their background knowledge was poor before using the forum.

Regarding the second research question about students' perceptions of the online forum intervention, the findings indicate that the online forum intervention left a positive impact on them and increased their background knowledge where students had the willingness to participate in the forum and interact positively when using it. In addition, the findings clearly indicate that students developed their knowledge after using the new tool.

Regarding the third research question about how do students react in the online forum, the findings show that the online forum was used constantly by the participants where students moved from being traditional receivers of information to being effective participants in creating knowledge. In addition, after using the forum, students were able to develop the features associated with a community of practice.

Chapter 6: Discussion

6.1 Introduction

The current chapter aims to provide an in-depth discussion of the findings as presented in previous chapter. In addition, the chapter describes the interpretations and explains the implications of the findings. In this chapter, the main concentration will be on discussing how the research questions that were presented earlier were answered, and the relationship between the answers and the existing literature.

This chapter is divided into two main sections. In the light of the research questions, the first section discusses the findings that have been presented in previous chapters and looks at them in the light of the existing literature. Secondly, a conclusion section is provided.

6.2 Participant's classroom experience

The previous chapter showed that students' perspectives of their current classroom experience concentrated on communication, interaction and collaboration between them, inside and outside the class and the factors that affect communication and interaction, and their perceptions of their background knowledge. The findings of the current research suggested that students' classroom experiences of communication and interaction were poor in relation to how they used and experienced technology, communication and interaction, a factor that was reported in the literature (Chapter 3). It was reported by participants that there were several missing elements in order to experience communication and interaction in their classroom. One of these practices was the traditional role of the curriculum, concentrating on delivering it on time and leading the class.

Data analysis, as presented in the previous chapter, shows that students' perspectives about their classroom experience revolved around difficulties they faced in order to communicate and interact with each other, and in learning the subject in the online forum and creating

new knowledge. In the following section, an in-depth discussion of these findings will be presented.

The findings of this study indicate clearly that students were willing to learn using the forum developed for this research. As a result of technological development in recent decades and the acceleration of using technology in education, the literature indicates that students can learn through new technological methods and programmes (Mandinach, 2005; Govindasamy, 2002; Mason and Rennie, 2008, Cheung and Slavin, 2011), can have a positive impact on students (Weller, 2002; Cheung and Slavin, 2011) and can also increase communication with teachers (Harasim and Yung, 1993; Berge and Collins 1996; Draves, 2000; Young, 2004).

However, these studies show that participants in their local context have different experiences of their learning in a classroom setting. Indeed, students using ICT are expected to have a change in their role as receivers (Muir-Herzig, 2004; Wasserman and Millgram, 2005), as can be seen in this study where students showed eligibility and enthusiasm to use new technological tools. However, students reported that they had poor communication, interaction and collaboration between them in the class and that was due to some of the classroom practices. This point might be attributed to low levels of confidence that teachers have in using new technology (Dawes, 2000; Lerner and Timberlake, 1995; Russell and Bradley, 1997) or their inability to access new technological equipment (Mumtaz, 2000).

The students reported that they were prevented from communicating and interacting with their colleagues in their classroom in most cases, and there was no one to explain the prohibition. Fabry and Higgs (1997) suggested that this phenomenon might be attributed to the fear of new technology shown by teachers and of losing their role in the classroom. However, teachers' perceptions of technology were beyond the remit of this study which instead focused on students' perspectives. The practices of using traditional methods in teaching the subject are in line with the traditional view of education in developing countries, where students receive information with no right to discuss or participate (Hawkins, 2002). As such, the Ministry of Education established 1500 centres to enter ICT into teaching (Ministry of Education, 2008). The traditional learning practices appear to be

the main factor behind that prevention (AlShammeri, 2007), but this does not explain the full dilemma that students face and its consequences. Cultural perspectives and school culture as well as prior training of teachers play a crucial role in their dependence on traditional teaching methods (Brooks, 1997; Salili and Lai, 2003; Yukselturk, 2010).

Yet, it can be argued that traditional teaching methods are still commonly used and accepted in Saudi Arabia and several developing countries, playing important roles in teaching; this study shows these roles to be negative in most cases, but may also be positive (AlShammeri, 2007; Al-Saggaf, 2004). In regard to this point, the traditional methods used with students in the current study played a more negative role as reported by participants, where the main motivation and target was to finish the curriculum on time. It should be noted here that students did not have their needs met, which might be understood as a pressure on the teacher (Guha, 2000). However, these practices, from the perspective of the students, have been shown to result in poor interaction between students in the class (Palloff and Pratt, 2001). The official education policy in the country supports the traditional role, which it has been practiced for decades and features as a core part of pre-service teacher training (AlMulhim, 2013).

It could be argued that poor interaction in the class reflects negatively on communication and interaction outside the class as a result, which can be attributed to the lack of communication and interaction inside the class. Students who have poor interaction inside the class are more likely to continue such behaviour *outside* the class and school (Plomp *et al.*, 1996; Voogt, 2003).

A related point is that a teacher in the current study seemed to demonstrate inflexible attitude and performance in the class as reported by participants, which hindered students' communication. However, this poor communication and interaction cannot be attributed entirely to performance of the parties at school, where teachers who have positive attitudes towards new technology are more likely to use it in the classroom (Grainger and Tolhurst, 2005). In the current study, it was reported that teacher showed negative practices towards using ICT with her students which was interpreted by them in several ways. For instance, students' experience shows that they were not leaders or active in the class and lack and poor communication can be attributed to the teacher's performance (AlMulhim, 2013). In

the role as the only controller in the learning process, the teacher has full authority in the class (Wang, 2003) and will only be questioned on rare occasions. From this point of view, teaching was not one of teachers' options and students were willing to have and create interaction if they had the opportunity. The disadvantage of implementing the teachers' way of teaching is that student interaction will be limited or absent. In the current research, interaction was reported by participants to be absent in most cases and it appears that there was just one source used to provide information: the textbook. Using the textbook as the main and only resource forced students to concentrate on the book itself and ignore other methods, including collaboration with each other.

In addition, the textbook itself appeared to be difficult to understand and contained abstract ideas that students could not have understood using traditional methods (Wang, 2003; Al-Tawil, 2001; Al-Gahtani, 2007; Allen and Seaman, 2005; Hill, 2008; Edmundson, 2007; Brooks, 1997; Hawkins, 2002; Palloff and Pratt, 2001), a point which emphasise the importance of this study in examining a newly forum.

Students' views of the barriers facing them were originally attributed to the limited role they had in the classroom, where they were receivers of information rather having the opportunity to interact with it. This role, however, can be understood from different perspectives, where cultural matters play a part (Yukselturk, 2010). The limited role can be also understood within a religious context, as well as the traditional methods used. This understanding was reflected in the way that the school responded to students' demands, where communication and interaction were at lower level.

As mentioned previously, this study focuses on students' perspectives and the teacher's voices are absent, although this omission can be compensated for by taking views from the literature and analysing findings. The use of traditional methods, however, has a long legacy, where most of the teachers were taught to teach using traditional methods that restricts student interaction. This interaction was seen by participants as limited or at a lower level. This is perhaps one of the main reasons behind students' largely positive involvement in the new forum, and also explains the way that they responded to it.

The literature suggests that students in developed countries who have access to new digital media tools and the Internet have the ability to use these in their leisure time as well as for

learning (Buckingham and McFarlane, 2001). However, this was not the main difficulty that students faced in this study and it appears from this study's findings and elsewhere that students in developing countries are still far from achieving this goal (Cuban, 2001). It should be noted that the process of integrating ICT into the educational curriculum needs preparation before being implemented (Sánchez *et al.*; 2010, AlMulhim, 2013).

Few participants agreed with these pedagogical methods used to teach them and they were away from boredom (Oyaid, 2009). The teaching methods in Saudi Arabia are still traditional, and those teachers who attempt to change them or introduce new teaching methods still receive little support (AlShammeri, 2007; Oyaid, 2009). Indeed, the traditional role of the students as receivers of information is seen as the biggest hindrance to implementing new teaching methods and, moreover, change is still taking place slowly (AlShammeri, 2007; Ageel, 2011).

6.2.1 Students' perceptions of communication and interaction

To reiterate, prior to using the forum, the students had poor interaction and levels of communication with one another. Specifically, students were prohibited from chatting, communicating or showing any kind of interaction in the class. This practice extended to outside the class in the school, and in their social life away from the school. Poor interaction was also found in the social network of students. In several cases, students reported that they had limited relationships with their peers in the class and, in many cases, they did not know each other's names.

Therefore, the foundations needed to create communication and interaction, to build a sense of community, were absent. The term 'sense of community' from a psychological perspective is defined as a: *'feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together'* (McMillan and Chavis, 1986, p.9).

Taking into account this definition, students had the opportunity to get to know each other or have a sense of belonging and share socio-emotional ties (Unger and Wandesman, 1985). In this manner, there was an absence of 'interdependence among learners, sharing the

same beliefs and the presence of connections and interactions regarding achieving the learning process and its goals' (Unger and Wandesman, 1985, p.51). However, several factors were reported to affect students' interaction and communication.

The reliance upon traditional teaching methods, as reported by participants, highlighted the urgent need to take several factors, including cultural influences, into account (Brooks, 1997). It is worth noting here that this role is strongly linked to education policy in developing countries. Specifically, an overlap between education policy and its implementation and the cultural backgrounds of schools is apparent. It was reported by participants earlier that there was a barrier of using ICT in learning the subject, which can be explained by how teachers' cultural backgrounds play an important role in their view of the teaching process and teaching methods (Edmundson, 2007). Although teachers' perspectives do not appear directly in this research, it is apparent from participants' views that the teacher used traditional, teacher-centred methods of teaching. The literature supports this view that the teacher's role is more important than the student's role and that authority is represented by the teacher (Brooks, 1997). This view was seen in the current research in the leading role of the teacher, who controlled the entire teaching process, where students had no opportunity to communicate or interact with each other. Few students, however, indicated that they were satisfied with their traditional teaching methods.

Furthermore, as was stated above, cultural perspectives play a critical role in changing attitudes towards giving students freedom to learn in different ways. In Saudi Arabia, cultural perspectives are critical because of the overlap between culture and religion, and the fear of change is obvious (Al-Tawil, 2001; Al-Gahtani, 2007). It is worth noting that not all teachers see new technology methods as useful and acceptable, and this can also be seen in most developing countries (Kellner, 2006). In several cases, disadvantaged populations and gender discrimination mean there is limited access to new technology (Edmundson, 2007; Cox and Cox, 2000). In Saudi Arabia, although women have more support compared to the last three decades, their full inclusion in society and full access to e-learning still needs constructive support (Khaleej Times Online, 2008; UNESCO, 2008), again raising the need for more backing for women's roles in society, especially when studies have found that a new generation is open-minded and self-confident (Al-Saggaf, 2004). Moreover, the

prevention of women from having access to ICT is deliberate in most cases. Perhaps it was a mix of cultural perspectives and traditional methods of teaching. Most of old generation of teachers learned by traditional methods and were taught to teach using those methods, as can be seen through the preparation of the class' physical environment.

In several cases, students reported that they were seated in an order where they had no opportunity to interact or communicate in the class. It is apparent that seating arrangements hinder students' communication and interaction (Hay *et al*, 2004; Hawkins, 2002). There was no evidence of a positive response to students' complaints about the organisation of their physical environment.

However, the hoped for changes should be commenced by the educational administration, who at present do not provide adequate technological skills and positive attitudes (see Oyaid, 2009). Studies carried out around the world have shown that teachers who are opposed to change have poor computer and Internet skills (Holmes and Gardner, 2006; Brindley *et al.*, 2009; Seale and Cooper, 2010). It is recommended here that teachers should have training sessions to master basic computer skills (AlMulhim, 2013), as the research participants have done. The benefits of mastering these skills are numerous for both teachers and students (Holmes and Gardner, 2006). Although research has shown the urgent need for teachers to master new teaching skills and get used to new technologies, there are no signs of progress in this direction in this study, according to participants (AlMulhim, 2013). This matter was supported by some quotations by the participants, who indicated that their teacher was far behind them in computer skills and that there was no sign that her attitudes towards new technology and using it with them would change soon. The need for compulsory training sessions for teachers and changing their attitudes has become urgent (AlShammeri, 2007).

6.2.2 Perceptions of their background knowledge

It was reported in this research that students suffered from poor knowledge in the subject. This lack of knowledge was attributed by participants to several factors, as shown in the previous chapter. However, as the new technology revolution helped in creating knowledge (Sigala, 2003), it appeared that the sample of this study did not have their opportunity to create their knowledge prior to using the forum. Students reported that their knowledge

before using the forum was limited and that was owing to several factors discussed above. Their report of limited knowledge was due to them concentrating mainly on nature of the subject, which needed memorising rather than developing a deep understanding. In addition, students noted that the way that had been taught the subject concentrated mainly on passing exams rather than building knowledge (Alsahli, 2012).

Some participants noted that the subject itself was a difficult subject to understand. They reported that they needed an assistant to understand the topics fully. As their interaction was limited with others, they reported that the experience of the forum was useful. In most cases, students' background knowledge in the subject depended on their own experience (Fisher *et al*, 2012) and some personal activities rather being operated by schools (Alsahli, 2012). The students' need to experience a new tool was clear from the way that they reported the experiences in the interviews and focus group discussion.

6.3 perceptions of forum intervention

In regard to using the forum, students reported enthusiasm that it was designed especially for them and, more importantly, was to be exclusively used by them. Yet, the accessibility to the forum was unacceptable by some parents from some conservative families (Heemskerk *et al*, 2012; Kellner, 2006). This forum's design was in line with studies that indicate that when designing or using new tools for students, these tools should take into account local cultural perspectives (Al-Tawil, 2001; Al-Gahtani, 2007; Kellner, 2006; Cockbain *et al.*, 2009). This indicates the importance of taking these perspectives into account, where integrating ICT depends on understanding the culture and background of the teaching staff and students (Cockbain *et al.*, 2009). The current research took into account the cultural perspectives of the local community, and designed a forum to respond positively to these perspectives. The advantages of applying these perspectives were shown in the willingness of students to participate and, more importantly, in the willingness of parents to provide the Internet to their daughters at home, although research has also indicated the negative effect of the Internet on students (Buckingham and McFarlane, 2001).

However, most studies support the notion of integrating ICT into education (Lillard and Peterson, 2011), as it provided them the opportunity to work from home to achieve their academic goals (Yukselturk and Bulut, 2007).

Use of the forum by students was stable and continuous. Reviewing students' participation in the forum through observing their participation and interaction shows that most participants commented via posts and suggestions on the forum. In the advanced phase, students went further by socialising with each other and referring to personal issues. However, this was done within the general context of the forum and the subject. The design of the forum assisted in this interaction, a point which is supported by the literature (Owston *et al.*, 2008; Donnelly, 2010). Specifically, the forum's design played an important role in increasing students' collaboration and interaction (Donnelly, 2010), and was not a factor of isolation (Fisher and Baird, 2005; Rovai, 2002; Patterson and McFadden 2009).

Another important point here is that the forum did not use a complicated or difficult design (as reported by participants), which meant the students, especially those who had limited computer and Internet skills, could use it with no hesitation (Ocak, 2010). In addition, the simple design helped to attract students to use the forum (Ocak, 2010). Moreover, the lack of complexity assisted parents in understanding the forum and to trying it by themselves to ensure that it was in accordance with their cultural preferences, a move which apparently assisted in increasing the students' participation and ensuring the study's cultural validity. Finally, the forum was designed to allow students to log on easily, which also assisted in increasing forum use (Bersin, 2004). Most studies agree that there is no one template or design of forums, but that accessibility is the most important factor for successful implementation (Amhay, 2004).

6.3.1 Perceptions on communication and interaction after intervention

The literature clearly indicates that interaction in online learning is considered to be the major factor that affects students' satisfaction and their sense of achievement (Offir *et al.*, 2008). Such interaction was apparent in the current study, where students communicated and interacted with each other and, more importantly, made the experience of learning the subject more interesting. Students in this study presented examples of sharing information, supporting their peers, encouraging group motivation and offering knowledge (Gerlock and McBride, 2103). In several instances, participants indicated that they had to ask for assistance from colleagues in order to respond to difficulties faced by them in

understanding some topics in the subject (i.e. low levels of cognitive ability, such as vocabulary, working memory and reading recognition) (Offir *et al.*, 2008).

It is worth noting here that changing the learning environment from the traditional class to one with online elements played a role in facilitating interactions. Koh *et al.* (2010) studied student knowledge construction during asynchronous online discussion. Knowledge construction was defined as the process by which students exchange thoughts with their instructors and peers to address and develop new ideas in order to solve learning problems. Higher levels of knowledge construction reflect a successful exchange environment among learning groups.

Students also reported that their communication skills were developed through using the forum tools and, more importantly, in gaining knowledge about the local community (Drent and Meelissen, 2008) and developing the '*abilities to discuss and gain a sense of community either among students or between students and instructors*' (Garrison *et al.*, 2001, p.46). Students in the current study shared information with peers on the forum which reflected their developing sense of community (Rovai, 2002). Showing sense of community and interaction can explain the importance of the forum for those students, as it provided them with tools and facilities that enable educational activities to be carried out, in particular the use of computers and network methods to enable and enrich interaction between learners (George and Hotte, 2003).

Finally, it is worth noting that using the forum to learn, build knowledge and increase communication and interaction between students did not ignore the traditional methods used with students. Dringus and Ellis (2005) argue that learning through using forums and new technology tools supports traditional teaching, although some difficulties can be encountered. However, these difficulties can be overcome (Alavi, 1994; Benbunan-Fich and Hiltz, 1999).

A community of practice, after using the forum, appeared to have developed. This can be seen through achieving a sense of community conditions. Specifically, in the current research, and as Wenger (1998) argues, this learning can exist anywhere, where many

people share the same conditions and aim to achieve the same goals. Students in this study shared their interests and wishes for better learning of the same subject in order to achieve their objectives. They also increased their communication and social interaction (Dodge, Colker and Heroman, 2003), and built new relationships with each other.

Taking this point further, this forum showed that there was a positive interaction between students through the discussion of a community of practice presented by Conole *et al.* (2003), who discussed Wenger's model (1998) regarding a learning Communities of Practice consisting of four main elements: meaning; identity; practice; and community. In the forum, students shared the same identity and meaning and this was reflected in the dynamics of communication using the forum (Shea *et al.*, 2005; Yildiz, 2009; Arbaugh and Hwang, 2006; Kehrwald, 2010). They also shared the same goals, and worked in a way to achieve those goals. This progress was supported by their interaction and what was stated by the participants themselves. The students' work, as Wenger (1998) indicates, provided them with a full opportunity to achieve their goals and, more importantly, to interact with each other. The success of the interaction is evidence of the successful e-learning (Palloff and Pratt, 2001), which was achieved in this research. More evidence can be seen through the similarity of students' interests working together, where the knowledge in the group is considered to be fundamental (McGregor, 2003).

6.3.2 Students' knowledge

It appears that the students' knowledge was developed from another perspective. Students commenced searching for the 'correct' information rather than following the textbook in order to construct their knowledge. Students were looking for more than what was presented to them and, more importantly, linked it to their social experiences, where, in several cases, they provided or asked for information about countries they had visited or were willing to visit. However, the students' focus was mainly on their academic tasks.

Students used this forum where they communicated with each other through logging on and adding new topics on the forum. This process, however, showed that students were willing to utilise the forum and more importantly benefit from it. In the next stage, students commenced reading posts and interacted positively with them. This interaction was through reading, thinking, searching for new information, and posting and asking questions. In the

collaboration stage, students posted, replied and provided information to their colleagues. These stages resulted in developing their understanding of the subject through improving their existing knowledge and/or building new knowledge.

Regarding their performance in the forum, students showed that they were capable of using new technology to learn and interact with each other. This clearly indicates their willingness to interact and communicate with each other as well as use technology to respond to difficulties they face in the classroom and develop ability of problem solving (Sarama and Clements, 2001). Indeed, in several cases, students showed practically (responding to using the forum) and verbally (interviews) that they were looking for such an opportunity to develop their social and academic skills.

Students reported that there were numerous benefits to using the forum, and their performance was as they expected. Their knowledge increased rapidly, and they had the opportunity to learn subjects that they did not have in class (Saunders, 2000) and develop their cognitive skills (Nir-Gal and Klein, 2004). Data analysis from the three data collection methods clearly indicates several examples of how students improved their knowledge and created a new knowledge. In addition, this knowledge was not exclusively academic, but also related to how to use the Internet and master computer skills (Al-Saggaf, 2004). In fact, the subject (Geography) itself is a developing subject that needs to be followed and updated. The students' learning was mainly concentrated on expanding existing information and seeking new knowledge. Such learning, however, needs to be managed and developed constantly (Garrison and Anderson, 2003). In addition, as Saunders (2000) points out, new technology tools, especially ICT, assist students in gaining knowledge and, more importantly, support students' learning environments. Moreover, this forum helped in increasing the academic performance of the students and in creating positive attitudes towards learning, as has been noted elsewhere (Felder and Silverman, 1998; Struyven *et al.*, 2006).

However, the participants reported that using the forum assisted them in responding to the curriculum, and to their teacher's demands. These demands, however, were strongly related to the textbook. It can be argued that the students benefited from the forum in three different ways by: gaining and building knowledge; interacting with colleagues and

increasing communication with their peers; and breaking the strict discipline of the school and the traditional methods used with students to teach the subject.

Geographic knowledge, as mentioned above, is not exclusive to the study of the subject itself but also extends to using computers and the Internet. In fact, the development of computer skills was crucial in using the forum. Saunders (2000) indicates that using computers in education and learning is most likely to improve computer, networking and online education skills. However, in the current research, these skills were extended to Internet usage and online research. Moreover, students learned to argue about their information and ideas while using a computer. It cannot be denied that most students already had computer skills, but nevertheless, their skills and abilities developed and improved. Students also reported that interacting and using the forum assisted them in developing their personal skills, and in presenting them with a new challenge (Lillard and Peterson, 2011). One of these challenges was developing their English language skills, a point mentioned by participants on more than one occasion. This development was strongly related to the search skills that students developed through using the forum.

The literature clearly indicates the importance of using the Internet with students in gaining knowledge and responding positively to curriculum demands (Jeong and Lee, 2008; Abbiss, 2009; Byron and Britain, 2008). Specifically, the forum gave the students a full opportunity to search and gain knowledge without feeling any pressure and, more importantly, assisted them in responding positively to the teacher's demands (i.e. assignments) (Schrum *et al.*, 2007). In this manner, the participating students developed different skills and, at the same time, had the opportunity to improve their study, reflecting Frey *et al.*'s. (2006, P. 30) statement that: *'Many benefits are associated with asynchronous online discussion as it can enable students to learn actively when compared with traditional 'face-to-face' learning. Students in asynchronous online discussions usually exhibit higher levels of cognition and interaction'*.

Indeed, these benefits were explicitly shown in the focus group discussion, where students displayed a high level of criticising, thinking, comparing and interacting. In the technology revolution era, students have shown their interest in learning new skills and knowledge and

developing their own personal skills. These skills, however, extend to interacting with others and experiencing new technology within their own culture.

In regard to students' willingness to learn with new technologies, participants showed a strong willingness to learn with a crucial need for direction. Moreover, this willingness appears to have been constant and urgent. Students were looking for change to keep in line with new developments in their society (Abramiet *al.*, 2008). These developments prompted students to develop their skills and interact positively in the forum (Biggs, 1995).

6.4 Students' reaction to the forum

Six groups of students (five students in each group) used the forum constantly and in varied rates. The forum was used in general for around 670 times in three weeks. Beginning with the ability to learn regardless of time and place, most students indicated that they were able in most cases to access the forum and learn, demonstrating their desire to learn and communicate anywhere and at any time (Govindasamy, 2002). This communication and interaction also assisted in creating team spirit and skills, where students assisted each other gather information, especially those who had limited access to the Internet, as will be discussed later (Peñalvo, 2008; Mason and Rennie, 2008). Students' knowledge appeared to be the main factor and aim. Their knowledge of the Internet and computer skills was crucial in being involved in the forum, although a training session was held in advance. Additionally, the aim was to increase and enrich students' knowledge, communication and interaction.

Salmon (2000) presented a model that can be used to interpret the findings and how students reacted to the forum, increased their knowledge, communication and interaction. In the first stage, students had the motivation to use new tools to learn, although there were several challenges they faced (Thomas, 2002). Indeed, the forum was the moderator that students had to rely on in order to have successful access and communication. In the second stage, Salmon indicated the importance of establishing the online identity. Students had their identity through socialising through participating in an exclusive forum. In the next stage, students started communicating and interacting using the forum with course materials or with other participants. That was shown through posting information,

commenting, asking, reply, confirmation, reply to reply, reply to extended information, questions, and social interaction and developing deeper understanding of the subject under study. Students then started constructing their knowledge and participate actively on the forum. In this last stage, as presented by Salmon, participants should be responsible for her or his own learning, and seek out more benefits from the e-learning system. Moreover, learners should be able to think critically and be self-reflective.

6.5 Using the forum

In order to answer the research questions and other related ones, this study uses some existing theory, particularly Knowledge Building Theory and Communities of Practice, to conceptualise the study's findings. This study concentrated on and aimed to explore the effects of new learning methods in assisting students to learn and increase their communication and interaction in studying the subject. In this manner, the study did not pay attention to the traditional methods of teaching that are followed in Saudi schools. Rather, it assisted students through pedagogical approaches (Sharpe *et al.*, 2006). This study utilised new 'knowledge-creating' cultural theory, enabled by new technologies such as the Internet (Scardamalia and Bereiter, 2006), and used it effectively with participants.

It was already argued that students in Saudi Arabia face difficulties in learning the subject due to several factors. Principal among these factors is the traditional teaching methods used with them in addition to the nature of the curriculum. However, these difficulties reflect negatively on student performance and interaction. Students as learners play an important role in an asynchronous e-learning process generally and in forum activities specifically, such as collaboration, interaction and discussion (George and Labas, 2008) and their satisfaction with peers on the forum reflected more success (Woods, 2002) as it was reported by them. In this context, although the teacher can be the course designer and assessor of the learning objects and tasks, she/he can also encourage students to participate actively and effectively in the forum. In this study, the mediator (researcher) played a crucial role in encouraging students to participate and interact in the forum. Students in this study showed a passion for building new knowledge and improving their current knowledge,

which was demonstrated particularly through showing a passion for sharing interest (gaining knowledge) and assisting each other, as was shown in the

Wenger (1998) introduced a model in which the learner's journey through the e-learning process represents several steps that reflect CoP. In addition, this forum was conducted in line with Wenger's (2006) definition of CoP, where students share their interests and passions in order to learn and interact. Moreover, students in the current study worked on the forum (informal network) to develop their understanding of their subject (Geography), and aimed to build relevant knowledge (Hara, 2009).

In the current study, students expressed a strong feeling of community of practice during the e-learning process. Consequently, they reported better instructional design (Shea and Bidjerano, 2010), a point shown in the participants' comments and sharing of information on the forum, which assisted students in showing their abilities and to think critically (Balaji and Chakrabarti, 2010). The main addition in this study is that students moved from being traditional receivers of information to effective participants in creating information. As Communities of Practice provides students with the advantage of 'multiple perspectives', it assisted them in interacting on the forum network and in searching for answers that could be shared with others and responding to difficulties they faced with studying Geography (Anderson and Felici, 2012). It can be argued that using forum facilitated the students in studying their subject using their own perspectives, rather than relying on others, which is strongly linked to the view of knowledge itself.

Viewing knowledge as a community or civil activity rather than as a highly scholarly activity (limited to a few brilliant minds) leads to the conclusion among students that knowledge can be created in classrooms. Students in this research shared the knowledge they gained outside of the class with the class members. Moreover, this research shows that knowledge can be created by participants and shared at a later stage. Participants showed strong feelings of interest, and a desire for gaining knowledge and sharing, where appropriate. As noted by Scardamalia and Bereiter (2006), there have been many instances of new visions and new dimensions of knowledge emerging once Internet use was introduced into classrooms. This research indicates also that knowledge can be improved through students who use new technological tools outside of the classroom (Scardamalia and Bereiter, 2006).

Moreover, knowledge can be modified where appropriate, especially when it moves away from more rigid controls of traditional methods. This research shows that learning can occur through social activities where there is less control or power, and more importantly depends on the students' peers and experiences (McEwin *et al*, 2005).

In this way, learning Geography becomes a social activity and a collaboration, which are keywords in the context of education (Lindh and Soames, 2004), a point reported by participants. Learning also motivates further thinking processes, as the multiple perspectives give rise to new questions and searches for information. Each act of conversation and collaboration also enhanced community bonding among involved students, which again can served to strengthen and develop the multiple perspectives involved. In this forum, the students went further by presenting new ideas, sharing and discussing them with other members of the group in depth. This study thus takes 'social activities' as a teaching method further by increasing students' communication and interaction without depending on social or entertainment interaction. Rather, it indicates that learning must not be the only aim of social activity, but it must also involve the development of social and communication skills, as interconnected activities.

In this research, the students sought to understand the ideas in the textbook itself and expand on them, but they also wanted to improve and enhance their knowledge and, more importantly, to share new knowledge with the group. On this point, Scardamalia and Bereiter (2006) noted that knowledge building is not always an enterprise of finding out a truth, but an improvement upon ideas that pre-exist. The groups in this study played a critical role in gaining knowledge and sharing it with their peers. Communication and interaction between groups was observed in the current study, where students participated effectively. Haythornthwaite and Andrew (2007) stressed the importance of social groupings around the act of learning, where they provide a space or forum for the exploration of knowledge and where students with basic knowledge from a textbook try to improve and expand on it. Indeed, instead of an 'authority-of-knowledge' model, what Scardamalia and Bereiter (2006) developed was an 'equality-in-knowledge' model, made possible by a forum such as the Internet and a model by which a great levelling is effected between the inquiries of great scholars and novice students whom both become party to the discourse.

The knowledge-building activities of both teachers and students are acknowledged as improvements on an existing knowledge base and an expansion of its present boundaries. The current research presents evidence of knowledge improvements in several cases where improvements on existing knowledge rather than arriving at ultimate truths become the key to this new paradigm (Scardamalia and Bereiter, 2006). For example, when a Geography student found specific information about her country by searching the Internet, and she shared this information on the forum, it had the potential to become a highly valuable input for others. In a traditional setting lacking an Internet presence, this information, although observed by a student, might have remained unshared and thus unacknowledged. Similar situations may arise in all disciplines, and this is why knowledge advancement in this theoretical model is seen as idea improvement.

The importance of student-created knowledge to the learning of other students in collaborative environments has been duly acknowledged (Lindh and Soames, 2004). In the current research, there were positive effects for collaborative learning through the establishment of social relationships and a sense of community, increasing motivation, reducing drop-out rates, and encouraging global and multicultural interaction and collaboration. That was shown in the group discussion between students. Moreover, Scardamalia and Bereiter have identified the function of education for younger people as being to 'enculturate youth into the evolving knowledge-creating civilization and to help them find a place in it' (Scardamalia and Bereiter, 2006: p.2). Thus, collaboration is the process by which communities of practice can remove the 'communication problems between' and among themselves (Anderson and Felici, 2012, p.58). This study indicates the point that communication and interaction obstacles can be overcome.

In this study's theoretical framework, the Internet is viewed as 'the first realistic means for students to connect with civilization-wide knowledge building and to make their classroom work a part of it', which is an advanced outcome of collaboration (Scardamalia and Bereiter, 2006: p.2). This study used the Internet as a means to facilitate communication and interaction (which was not utilised before in the schools) and shows that the Internet can be part of building knowledge. The current study has opened the door to researching the role of the Internet in building knowledge.

Girvan and Savage (2010) have further developed the model put forward by Scardamalia and Bereiter (2006) and observed that 'communal constructivism' is becoming a new pedagogy in the use of computer-enhanced virtual worlds in education. Girvan and Savage qualitatively analysed the data obtained from a study that involved five learner groups who interacted in virtual worlds and assisted the generation of '*chat logs, learning artefacts, post-activity semi-structured interviews, and researcher's observations*' (Girvan and Savage, 2010: p. 342). The inferences drawn from this analysis suggest that 'learners collaboratively constructed knowledge for themselves as a group and for others, as the features of the pedagogy emerged' (Girvan and Savage, 2010, p.3). The process of 'self-regulated learning' goes hand in hand with this collaborative discourse because, apart from oneself, and to a limited extent, the teacher and no other authority, oversee this knowledge-construction process (Scardamalia and Bereiter, 2006). It is the collaborative construction of knowledge that results in the development of a new pedagogy (i.e., approach to teaching).

Students in this study did not create their knowledge prior to conducting this study. Rather, they depended on traditional methods of learning to provide the basis from which they were able to build in their use of the forum. In addition, there was not a belief or even awareness that student interaction could not create knowledge or even assist in building knowledge. This study indicates that knowledge-creation platforms make possible the construction of knowledge through interaction, whether it is in a school or within a research community or among communities (Scardamalia and Bereiter, 2006). Computer Supported Intentional Learning Environments (CSILE) was considered intentional, as students in this learning environment 'learn how to set goals, generate and interrelate new ideas, link new knowledge to old, negotiate meaning with peers, and relate what they learned to other tasks' (Snowman *et al.*, 2011: p.359). Subsequently, the cognitive effects of CSILE were studied by several researchers (Lipponen and Hakkarainen, 1998; Neto and Brasileiro, 2007), who concluded that the 'knowledge-building pedagogy' that emerged out of this technology-enhanced environment is student-centred, improvement-oriented, and collaborative (Scardamalia and Bereiter, 2006).

This study, which focuses on communication, interaction and collaboration between students using an online forum for achieving a particular learning task in the subject curriculum, is an example of this constructivist approach to knowledge and pedagogy. This

newly created forum can achieve a particular learning task in the subject curriculum through a collaborative discourse that leads to improving the existing knowledge, which is actually a process of constructing new knowledge. It is the technology involved and the online nature of the forum that is applicable to this situation of collaborative knowledge construction (Scardamalia and Bereiter, 2006; Vonderwell and Zachariah, 2005). For instance, in this study, students provided an easy-to-understand graphical design of maps using computer-enhanced tools and their creativity, and this amounts to the construction of knowledge. The design created by these students can become a standard model for other students which can then be accepted as a model by teachers as well.

Prior to conducting this study, students worked and learned individually. However, every student involved in the endeavour of learning became equally important because it was unpredictable who was going to discover some new information or arrive at a new idea that could contribute to the knowledge-construction activity. As the current research focused its attention on an online forum for female secondary school students aged between 17 and 18 in Saudi Arabia, this model appears to be especially relevant. This relevance comes from the forum's ability to give these students, who are living in a society that imposes many restrictions on its female population, access to worldwide collaborative discourse in knowledge-building and which, in a traditional educational model, they cannot access. As the researcher puts up a project for them in the forum to allow them to learn, share and improve on their knowledge, they will become parties in the construction of knowledge, offering a culturally new and unique perspective that has remained hitherto unexpressed owing to social restrictions. As Zhang *et al* (2009) have suggested, this small group of students can be developed into a loosely bound network of groups in 'opportunistic collaboration, with small teams forming and disbanding under the volition of community members, based on emergent goals that arose as they addressed their shared, top-level goal of refining their knowledge' (Zhang *et al*, 2009, p.7) of their the subject curriculum.

It can be concluded that Knowledge Building Theory and Communities of Practice assisted the researcher in understanding the data better in this study's context. It can be seen above that the data, as interpreted and then understood within the theory, and, in some cases, the findings, provide understandings in addition to the theory itself.

6.6 Conclusion

In this chapter, the findings of the previous chapter were discussed in depth and linked to the existing literature. The similarities and differences were identified and discussed. In conclusion, when comparing the findings with the literature, the newly developed tool, the forum, assisted students in creating and improving knowledge. In addition, students' communication and interaction increased rapidly (Voogt, 2003), and that is in line with the existing literature, which stresses the importance of integrating new technology tools in teaching (Sánchez and Salinas, 2008; Barak, 2007; Sánchez *et al.*, 2010; Warschauer *et al.*, 2004). The teachers' role is still to be filled as some studies in Saudi Arabia have indicated that female secondary teachers do not intend to use technology in teaching (Alotaibi, 2011). Moreover, some participants indicated that their teacher was a hinder to using technology and developing the students' communication and interaction in the classroom, activities which should be taken into account in future research as well as gender (Heemskerk, Volman, Admiraal and Dam, 2012). A deep discussion of the findings was presented, taking into account Knowledge Building Theory and linking and discussing it with the new findings, where this theory was used as a framework to assist in understanding and interpreting the data. The next chapter presents a conclusion of these findings and link it to practices and future research.

Chapter 7: Research Conclusion

7.1 Introduction

This chapter summarises the findings from the study and draws some important conclusions. The chapter ties together, and attempts to integrate the findings of the research with other published research and discusses some implications and recommendations for further research.

The chapter begins with a general overview of the study, before setting out the main results of the study. The implications of the study are considered, as is its contribution to overall theory and knowledge in the field. Some research recommendations are provided, and the limitations of the study are discussed.

7.2 General overview

The aim of this study was to bring a better understanding of the use of an online forum and to identify the learner-based issues associated with its use at a secondary school in Saudi Arabia. The research was carried out in two phases. The first stage was undertaken by holding a training session and introducing the new online forum to the participants, through which they could learn, communicate and interact. In the second stage, students were observed online and then interviewed individually and in focus groups in order to shed more light on the main themes and issues emerging from the first round of data collection.

Three approaches were used to analyse the data: Discourse Analysis; Content Analysis; and Thematic Analysis. Eventually, three main themes emerged: (i) students' perceptions of their classroom experience; (ii) students' perceptions of the forum intervention; (iii) students' reaction to the forum in developing features associated with community of practice.

7.3 Research findings

7.3.1 Students' perceptions of their classroom experience

The research showed that students had poor communication and interaction, both inside and outside the classroom. Participants attributed these low levels of communication and interaction to various factors such as lack of time, restrictions imposed by the school, and the teacher-centred methods employed at the school. However, these factors were strongly linked to the school as an organisation and to the educational system, rather than to the students themselves. The students clearly indicated, through their reports, that their need for a new tool to learn the subject was urgent. It is clear from the research that the education system, which in Saudi Arabia is very centralised, and individual practices in the school itself, play a crucial role in reducing students' communication and interaction, and that students are substantially affected by this system to the extent that they do not make the effort to interact with each other; and the lack of effort to communicate and interact with each other also extends outside the school.

In many cases within the study, participants showed a willingness to communicate and interact with each other, if they had the opportunity to do so. Yet this willingness was not matched by either the school or educational system. Initiatives that were implemented by the Saudi Ministry of Education did not appear to meet the need of students in fostering inter-student communication and interaction. However, communication and interaction was not perceived by participants as a priority for their school. Students reported that their classroom experience clearly showed a lack of encouragement to communicate and interact with each other, which was reflected in the students' social relationship with their peers and ultimately on their knowledge. It is worth noting here that regular activities implemented within the classroom did not compensate for the absence of communication and interaction; the result was that communication and interaction outside the classroom was limited. It appeared that the technological revolution had not impacted upon the students.

It is also worth noting that participants did not directly criticise their teachers. Instead, most criticisms concentrated on the lack of opportunities that were available to encourage communication and interaction between each other. It is worth remembering at this point that the voice of teacher was intentionally absent from this study as it was not one of

research aims. That absence does not deny that teacher was qualified to respond to students' needs in different ways. These practices result in low levels of interaction between teacher and students and reflect negatively on students and their communication, interaction levels and, ultimately, their knowledge acquisition. However, this correlation should encourage teachers to develop their computer skills (Al Shammmary, 2007) and ultimately develop their teaching methods.

It can also be concluded that the students themselves were not sure of the support they could receive from their schools, parents and colleagues in venturing into more interactive ways of studying. It can be argued that students did not receive the support and guidance that they should receive from these parties, especially their school and the Ministry of Education. This can be seen in the conservative society of Saudi Arabia where rules should be obeyed, as in the example of their seating arrangements in the classroom in ways which prevent their communication and interaction.

The research therefore suggests that there is an urgent need to work with both the Ministry of Education and schools as it appears that schools are still not changing their attitudes towards integrating ICT. Another important conclusion of the research is that cultural perspectives play a significant role in changing the attitudes of students. In Saudi Arabia, cultural perspectives are critical because of the dominance of religion, and the fear of change is widespread and noticeable (Al-Tawil, 2001; Al-Gahtani, 2007). This is best understood on the basis of limited access to the Internet and the lack of understanding of gatekeepers (parents and school) in its use, especially as not all stakeholders regard new technology methods as useful and culturally acceptable, a factor which Saudi Arabia shares with other developing countries (Kellner, 2006).

In addition, it is evident from the students' willingness to use the online forum that there is a significant potential benefit for Saudi schools in integrating ICT within schools in order to enhance and increase communication and interaction between students. This change has implications for all parts of the educational system and suggests that there is an urgent need to look at those practices that prevent or hinder communication and interaction between students. Indeed, as mentioned earlier, these barriers can be overcome at the system level by the Ministry, at the local level by school administrations and at the family level by

parents. This would lead to a process of integrating ICT in schools rather than changing the traditional teaching methods or random integration of new technologies.

7.3.2 Students' perceptions of the forum intervention

Findings of this research showed that students' reactions regarding communication and interaction on the online forum was noticeable. Participants indicated that their reaction to using the forum was in general positive, although there were a few cases where students indicated that they preferred to be taught using traditional methods of teaching. However, even these students reported that they did not have negative views of the online forum. Indeed, generally participants showed positive attitudes towards communication, interaction and collaboration when using the forum. Data analysis revealed that students were enthusiastic to use the forum, a point evident through assisting each other on different tasks. Participants also reported that their interaction levels increased rapidly and this interaction led to their learning more skills and increasing their social networking as students reported using the online forum reflected positively on their relationships with their peers.

Regarding their knowledge, the forum assisted them in logging on more often and was a source of support in helping them learn. This learning, however, was linked to the way that the forum was presented to them and to the extent they needed it. In several cases, the students' increased levels of knowledge was evident by the analysis where discourse analysis showed that students reacted in several ways to comments and posts of their colleagues. The data showed that the students' reactions to the forum depended on the training session that students had received their technological skills and the well-prepared structure of the online forum and the availability of Internet services. The logging-on process took place outside the school; students repeated limited access was attributed to poor Internet service at home.

7.3.3 Students' reaction to the forum

Data analysis showed that students used the forum constantly. This use coalesced around seven 'domains': 'information'; 'reply'; 'confirmation'; 'reply to reply'; 'reply to extended information'; 'questions; and 'social interaction'. The findings show that there was variation in the use of the online forum and that there was an increase in the level of communication,

interaction and collaboration before and after using the forum. This does not suggest that participants did not have any kind of Community of Practice before using the forum. It was reported by participants that using a reliable, attractive and well-designed forum was the main factor behind the difference in their performance. This difference was reflected in the way that participants were motivated to undertake greater levels of communication, interaction and collaboration with their peers and improve their knowledge.

From an academic standpoint, it was interesting to see the students report that they achieved progress and used the forum to assist them in understanding their subjects. In many cases, the students increased their knowledge in the subject because of their participation in the forum. In particular, students in this stage aimed for and achieved sharing of resources, developed their practice through problem solving, identifying gaps and requesting information.

It can be concluded through the empirical findings and the students' reporting that Community of Practice after using the forum was achieved through sharing interests and desires to learn the subject. As Community of Practice is more than a group of people who share some interests, participants felt that something had changed, and for first time they interacted and had the opportunity to communicate and learn their subject in a different way.

7.4 Contribution to knowledge

This research is distinctive, as it is considered one of the few recent studies to consider the perspectives of students on integrating asynchronous e-learning in female Saudi secondary schools and increasing communication and interaction. Numerous researchers have investigated the impact of using technology tools on students around the world (Harasim and Yung, 1993; Conole *et al*, 2003; Seale and Cooper, 2010; Barak, 2007; Stephenson, 2001; Dermo, 2009; Lai and Ng, 2010), with various findings. Yet, to the researcher's knowledge, this is the first study to be carried out on a female Saudi sample exploring the students' perspectives rather than concentrating on teachers and officials of the Ministry of Education. A number of studies have investigated the differences between Community of Practice before and after using a forum. Thus, this research has found its place in examining students' perspectives towards integrating a new technological tool in teaching a subject.

This research is therefore the first qualitative study to investigate the real status of learning a new subject using an online discussion forum in a Saudi secondary female school and to consider how the system is able respond effectively to students' needs. The study was conducted through enabling the voices of students to be heard. In the interviews conducted (individual and focus group), the views of students were articulated. More critically, this study emphasises the importance of implementing comprehensible, understandable and clear educational policies that meet the needs of students learning in Saudi schools and can increase their communication, interaction and collaboration levels in addition to their knowledge.

As traditional Saudi cultural practices (e.g. strict segregation of males and females) impact upon the way that pupils participate in education, there is a need to understand cultural perceptions in Saudi society in order to understand students' reactions to poor teaching methods used in the classroom. Using the Community of Practice framework provided useful insights into understanding the communication and interaction before and after using the forum.

This study has also extended the scope of some studies carried out previously (e.g. AlShammeri, 2007) by investigating students' perspectives. Unlike other studies, this research examines students' views on applying new technological tools and has concentrated on females, rather than males. Unlike most previous studies, which have tended to use quantitative methodologies, this study employed a qualitative approach. The importance of implementing this research using a qualitative approach for most issues means that these issues were able to be investigated and discussed in depth. In addition, as this study used three data collection methods, participants had a full opportunity to speak out freely without any fear of consequences that might result from responding to this research about their teachers and the school.

Another hidden barrier to our understanding of teaching subjects was unveiled during the data collection stage. The Ministry of Education, which should support research in developing new teaching and learning strategies and encourage communication between students, did little in this respect. There was an absence of Ministry of Education's role in embracing and improving knowledge or promoting change. This perhaps reflects the perspectives of the older generation of officials (the Ministry of Education's officials, head

teachers, and teachers) who either seem unaware of the positive potential for change or refuse to engage with change or accept it.

In a developing country such as Saudi Arabia, it is hoped that this study opens the door widely to integrate ICT in schools effectively in general and in teaching and increasing students' communication, interaction and collaboration where the study suggests that positive attitudes exist towards gaining knowledge by using new technology tools.

7.5 Theoretical contribution

This study looked in a different way at traditional methods (teacher-centred methods) of teaching the curriculum of a specific subject. Specifically, traditional methods were not ignored completely; rather, they were considered as ways in which students work in classrooms where teachers lead the class. This study uses Knowledge Building Theory and CoP as its theoretical framework. It is evident that adopting five elements of Knowledge Building Theory – knowledge advancement as a community activity, knowledge advancement as idea improvement, knowledge advancement as collaborative learning, knowledge advancement as constructive use of authoritative information and 'knowledge of' in contrast to 'knowledge about' – in the study shows that students can gain and build knowledge through using new e-learning designed tools. In addition, this study indicates that mediators, as described in the theory, can play a critical role in assisting in learning using a designed forum.

As this research adopts knowledge theory as its framework to understand the data, the need for understanding the data within the framework is highlighted. The theory concentrates on building knowledge through community activities rather than individual efforts; students therefore used an online forum both as a tool to gain knowledge and as a tool to communicate and interact. This study extended Knowledge Building Theory by examining the ability to create and gain knowledge using an online planned tool, where social activity between participants was dominant. This study also shows that students can be active members of knowledge-building communities rather than traditional learners who focus on receiving knowledge (Scardamalia and Bereiter, 2006). However, communication, interaction and collaboration were at the core of implementing the forum and building knowledge.

Using Knowledge Building Theory has assisted in understanding the data from more than one perspective, but it is worth noting that this theory was published in 2006. In the intervening ten years, several developments in the field of technology have taken place. Using a new e-learning method, this study has indicated that knowledge can be built and improved through concentrating on learners. This study has demonstrated that learners can build their own knowledge, rather than following strict planning set by teachers whose role it is to design tools, issue general instructions and provide topics. Knowledge improvement was exemplified in this study in the way in which the students' strived to solve problems and moved from one problem to another in an effort to build knowledge. Furthermore, participants in this study showed that improving ideas and knowledge represents the core of learning; guiding knowledge rather than forming a traditional part of learning activities. In addition, students developed methods of generating and improving ideas. It is apparent that the role of teachers, schools and policy-makers was absent and this was compensated for by the students themselves.

As 'knowledge about' more often incorporates traditional methods in schools (as in this study), this study took 'knowledge about' and 'knowledge of', as described by Scardamalia and Bereiter (2006), for further examination. This study has shown that students are more likely to use 'knowledge of' rather than 'knowledge about' when they have the opportunity to do so. Indeed, in the forum, students used textbooks as guides for more exploration of knowledge, therefore getting around the problems of what Scardamalia and Bereiter (2006) described as the 'limitations of knowledge about'. Participants in the current study used 'knowledge of' through problem-solving, although this activity does not automatically generate deep knowledge. Rather, students continually used communication and collaboration to gain and improve ideas. The collaborative approach led to students being more likely to respond or deal 'with problems that result in deep structural knowledge of' (Scardamalia and Bereiter, 2006, p. 11).

This study has shown that the combination of strict cultural perspectives and traditional teaching methods used by teachers does not reduce students' levels of willingness. Specifically, the forum was applied in a strict cultural environment in which there is a rigid separation between males and females and where only face-to-face teaching methods are applied. Students in this study showed their ability to build, improve and expand their

knowledge, despite being restricted by these factors. Indeed, the students' willingness to learn played an important role in guiding them to learn, expanding their knowledge and increasing their levels of communication, interaction and collaboration.

This study therefore demonstrates the importance of creating a new knowledge environment. Indeed, part of this environment involves giving students the full opportunity to create or expand knowledge. In the current study, students used the online forum to create their knowledge environments and responded to each other's needs. This study extended this theory by indicating that creating and building knowledge can reinforce communication, interaction and collaboration, which can take place in a cultural environment that usually restricts such interaction. It is worth noting here that this theory was adopted using five of six elements in the Knowledge Building Theory, as this study has focused on the learning process itself (using the online forum) rather than on receiving fixed facts.

7.6 Research recommendations

Several recommendations emerged from this research and relate to increasing communication, interaction and collaboration within the context of Saudi education system based on the findings of the study.

7.6.1 Changing in the role and policy of the Ministry of Education

It is critical to change the Ministry of Education's role in specifying certain methods of teaching towards understanding the role of new technology in the teaching process. The Ministry of Education should train teachers to use new technology tools in teaching and teachers need to be provided with the capability to meet students' needs, with the aim of reducing the number of failures in schools and focusing on the benefits of interactive learning.

In addition, the Ministry of Education should change its policy where the need for increasing communication, interaction and collaboration between students in schools is a basic requirement by students. The suggested policy should move from concentrating on implementing classes to providing information towards building knowledge. The ministry has to take into account international perspectives of applying ICT in many developed

countries and findings of research applied. It is worth noting that the Ministry of Education implemented several projects regarding integrating ICT in schools, as discussed in chapter two, without taking into account the requirements to allow these projects to be successful.

Thus, the implementation of multiple teaching methods or adopting new methods should be planned and designed by various parties, including the Ministry of Education, schools and other professionals. Therefore, building a successful partnership between schools and students to make the veteran teachers aware of new technology is vital, as is urging them to seek assistance to understand the curriculum.

Hence, it is concluded that the Ministry of Education has to provide schools within with obvious and specific policy steps to be followed to teach the subjects. Furthermore, it is vital to give schools the full opportunity to utilise existing literature and tools in their teaching in schools (especially the Internet). Specifically, teachers should be taught that knowledge can be gained in different ways, rather than only through traditional methods.

7.6.2 Change in the role of schools

Any changes in the policy and role of the Ministry of Education should be reflected in the attitudes of schools' attitudes towards using new technology in the classes. This reflection should be a priority as evidenced through the responses of the students. Indeed, amending attitudes can be a key factor in establishing a successful national policy. As the education system in Saudi Arabia is centrally administered, head teachers, especially older generation head teachers, can be the key factors through which to implement a change in attitudes, as teachers tend to adhere to their head teacher's policies. In addition, training before and during service is significant in shaping positive attitudes, as is dealing with technology tools, which can contribute in a positive way to changing educators' attitudes and can be achieved through:

- Creating partnerships between the school and parents to hold seminars and workshops to introduce parents to new technology tools.
- Including courses regarding class management within the pre-service curriculum for teachers, covering, for example, using technology.
- Assisting teachers to accept that using more teaching methods is not a negative; rather, it is a part of the diversity of teaching methods.

- Identifying subjects in the curriculum that should make teachers use new technology in the classroom, to send an obvious message to students that knowledge can be gained through different methods.

7.6.3 Students' training

Taking the research findings and above recommendations into account, there is a need for well-prepared training sessions to train students and other relevant parties related to teaching students in secondary schools on using new technological methods. The aim of training sessions is to prepare students with the required skills to use technology and, more vitally, to work with their peers who need to acquire skills in communication, interaction and collaboration. These training programmes should not be exclusive to students, but should be extended to pre-service teachers, and also to other teachers and head teachers who should be included in pre-service training. It is critical to include some technological training sessions for pre-service teachers in universities' curricula. In addition, the Ministry of Education has to play its role by designing and implementing incentive sessions and workshops.

7.6.4 Infrastructures and educational tools

Most public schools are equipped with computer labs and Internet access, but these are not used regularly, are out-dated or have poor Internet access. The Ministry of Education and schools are not willing to equip the classrooms themselves with extra equipment that are required for integrating ICT. Although the voice of the teacher was absent in this study, in several cases, it was noted that the teacher did not use any educational tools to assist her in teaching her students or to assist in building knowledge rather than providing students with absolute information. There is an urgent need to encourage schools and the Ministry of Education not to avoid using new technology tools, where it is available. However, this avoidance is a result of an absence of accountability and encouraging particularly prevalent in public schools.

7.7 Research limitations

A number of limitations may influence the findings of this study. Firstly, the voices of teachers were absent. No interviews were conducted with teachers to hear their opinions

and perspectives. Important validation of the conclusions could have been drawn through hearing the reflections of practising teachers and officials of the Ministry of Education.

Secondly, the students who were interviewed were from one school in one big city in the country. This also reduces the general nature of the findings. However, there was not adequate time or effort available to extend the research to other Saudi contexts such as rural settings where students need to travel longer distances to school or poorer areas where access to technology might be more limiting. In addition, as the research explored cultural views, examination of interactions and communications in rural areas was not possible. This would be expected to result in some regional differences in findings; although Saudi people have one cultural identity, regardless of their ethnicity, people in cities are expected to be more broad-minded than those from countryside and desert areas (Al-Gahtani, 2007).

Finally, this study was applied on one public school and did not include any private schools where using technological tools are expected to be higher than public ones. In addition, some of private schools, especially in big cities such as Riyadh, Jeddah, and Dammam, apply western discipline systems that differ from those applied in public schools where it allows students to have more interaction with colleagues.

7.8 Further research

Future research should be undertaken in areas such as: communication, interaction and collaboration between students when using the online forum to achieve a particular learning task in the geography curriculum within a larger and more representative sample (geographical area and sample from private schools). In addition, cultural factors influencing teachers' attitudes towards using new technology and teaching methods in a Saudi context should be concentrated on in future research.

Moreover, parental involvement in facilitating the use of new technology for their daughters should be studied more specifically and the factors affecting it. Furthermore, the role of cultural values needs to be explored in shaping attitudes of schools towards changing traditional methods of teaching and their role in increasing communication, interaction and

the collaboration between students. Finally, private schools' experiences in using new technology should be examined to determine the possibility of generalising this to public schools where comparative research might raise some useful insights into integrating ICT in schools.

7.9 Conclusion

This research study has investigated the perceptions of the students with regard to current classroom sessions and pedagogy, analysed the methods and strategies by which an online forum could be integrated with the current traditional teacher-centred curriculum, assessed the benefits and challenges of implementing an online forum and examined the different ways in which the online forum can be integrated into the curriculum and classroom pedagogy. The study has shown that the introduction of technology, in this case in the form of a forum, increases students' communication, interaction and collaboration regarding the subject content and therefore, based on a social constructivist understanding, impacts upon the learning process in a positive way.

This research has to open the door for integrating asynchronous e-learning in Saudi schools to meet the rapid development of technology and rapid increase of using it, especially social media by students. More studies on integrating ICT in teaching and increasing communication and interaction between students can lead the Ministry of Education to change its policy and accelerate this change. In addition, this study is expected to overcome bureaucratic obstacles that are facing Saudi schools in general and female secondary education in particular and ultimately leave a significant impact on students' communication, interaction and learning.

The findings of the current study answered the research questions as follows:

Regarding the first research question about students' perceptions of their current classroom experiences, the findings indicate that the students perceived that they had relatively poor communication, interaction and collaboration inside and outside their classroom and this poorness is attributed to several factors such as the teaching methods and the physical environment of the class. In addition, students reported that their background knowledge was relatively poor before using the forum.

Regarding the second research question about students' perceptions of the online forum intervention, the findings indicate that the online forum intervention left a positive impact on their socialisation and had a positive impact on their background knowledge; students had the willingness to participate in the forum and interact positively when using it. In addition, the findings clearly indicated that students developed their knowledge when using the new tool.

Regarding the third research question about how do students react in the online forum, the findings indicated that the online forum was used persistently by the participants and the students moved from being traditional receivers of information to effective participants in creating shared knowledge. In addition, students after using the forum were able to develop features of community of practice.

Overall, this research has identified that the use of an online interactive social media can have a positive impact upon students' perceptions of their communication and engagement with the subject matter of their learning.

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Appendices

Appendix 1 Forum online-observation schedule

Date 05/03/2013	Group 1	Group 2	Group 3	Group 4	Group 5
Activity	Students began logging into their private page at 5:58 PM. - Students discussed topic on forests in Europe. -At the beginning they discussed the meaning of the word "Europe". This is a good idea so that the girls could take full account of Europe.	-None of the schoolgirls logged into the special forum.	-The students began logging into the page at 1:23pm after coming back from the school by discussing the regions of Europe and natural phenomena in Europe.	-Logging was at 5:27 Pm. -strong interaction by A.F. -The students began in discussing the population of Europe (Density of population).	There is no participations by the students of the group in the page for that day.
Nature of discussion	-B.A and `A.F added many aspects to discussion like the definition of the European continent. -B.S tries to encourage the students by writing the topic and asking the schoolgirls about the authenticity of information.	There is no any interaction because of the problem in logging into the forum.	-R.A began in writing a topic on territories in Europe. -Then, the students replied. - All of them are interactive in the discussion, especially A.D.	-M.A and E.S added much to the discussion and mentioned the percentages and numbers. -M.N tries to pay the attention by posing many of questions.	-There is no any interaction because of the problem in logging into students' private pages. -Most of students participated in the other groups. -H.A and J.B have participations in the second group.
Technical issues/ how the issues solved	-There are no technical problems in the page of this group.	-Forum page is not existent to the students, so none logged into the forum this day. -One of the students sent an e-mail to ask about the reason of the problem.	-There is not any technical problem. It is noted that R.A resend the message more than one time.	There is not any technical problem. -W.J has a problem in attaching the photos. -Some photos do not appear in the page, but the link only appears.	Forum page is not existent to the schoolgirls, so none logged into the forum this day. 3 3-mails had been received from the schoolgirls asking about the reason of this problem.

		<p>-Communication with the company by contacting them and sending an e-mail for solving the problem in this page.</p> <p>-The problem had been solved.</p>		<p>-Communication with the company to know the reason.</p>	<p>Communication with the company by contacting them and sending an e-mail for solving the problem in this page.</p> <p>The problem had been solved.</p>
Suggestions		<p>-The students must be informed tomorrow of the necessity to send e-mail in case of any problem in logging in.</p>	<p>-In the interview, students shall be asked about the reason behind their logging into after the school directly.</p> <p>-To pay the attention of the students that they must benefit much of all the forum services like omitting and adding by sending e-mail to them.</p> <p>- Asked M.S about the reason of resending same information more than one time.</p>	<p>-To pay the attention of the students to be sure of the appearance of the photos in the topic.</p>	<p>-The students must be informed tomorrow of the necessity to send e-mail in case of any problem in logging in.</p> <p>-To tell the students that participations shall be in all forums, not only in the special forum(their page) of this group.</p>

Appendix 2: Permission of the Ministry of Education in Saudi Arabia

الإدارة العامة للتربية والتعليم بمنطقة القصيم

الرقم : 33163408
التاريخ : 1433/01/23
المرفقات :

الوظوف : تسهيل مهمة الباحثة /هند الديبخي .



وزارة التربية والتعليم
Ministry of Education

المملكة العربية السعودية
وزارة التربية والتعليم
الإدارة العامة للتربية والتعليم بمنطقة القصيم
إدارة التخطيط والعلوم

المكرمة مديرة الثانوية العشرون
المكرمة مديرة الثانوية الثالثة والعشرون

ببريدة وببريدة وفقها الله وفقها الله

السلام عليكم ورحمة الله وبركاته

تقوم الباحثة هند بنت عبد العزيز الديبخي بجمع بيانات وعمل مقابلات في جودة التعليم الإلكتروني كأحد المتطلبات الرئيسية لمرحلة الدكتوراه وذلك على عدد (١٠ - ١٥) طالبة .
أمل تسهيل مهمتها بحضور المرشدة الطلابية في المدرسة .

والسلام عليكم ورحمة الله وبركاته ،،،

المدير العام
١٤٣٣ هـ

عبد الله بن إبراهيم الركيان
عبد الرحمن بن صالح الصمغاني

هاتف : ٠٦ ٣٢٤٧٠٠٠ فاكس : ٠٦ ٣٢٤٠٥٦٥ - الموقع : www.qassimedu.gov.sa

Appendix 3: Consent Form



(To be translated into Arabic)

Dear participant,

My name is Hend Aldobaikhi. I am a PhD student at the School of Education at Southampton University- UK. I am conducting a study titled: The impact of asynchronous e-learning on interaction and collaboration for Saudi high school students in the Geography curriculum.

I would like to ask you to participate by using the designed forum and to be interviewed individually and with other participants (focus group).

All data collected will be anonymised to assure confidentiality. You may request the return of your data or interview transcript at any time.

If you have any questions or concerns relating to this study, please contact me or alternatively you may contact my supervisor at Southampton University at the following address:

John Woollard,

School of Education at Southampton University- UK

J.woollard@soton.ac.uk

The researcher

Hend Aldobaikhi

haa1v09@soton.ac.uk

Tel: 0557555000

I freely and voluntarily consent to be a participant in the pilot study for research project on the topic of: *The efficacy of asynchronous e-learning on education achievements for Saudi high school students*. I have been told that my responses will be kept strictly confidential. I also understand that if at any time during the interview I feel unable or unwilling to

continue, I am free to leave. That is, my participation in this study is completely voluntary, and I may withdraw from it at any time without negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. My name will not be linked with the research materials, and I will not be identified or identifiable in any report subsequently produced by the researcher. I have been understood that this interview to be conducted by Hend AlDobaikhi as principal investigator. .

Please initial the box (as) if you agree with the statement(s):

I have read and understood the information sheet (Participant Information Sheet v3.0 and have had the opportunity to ask questions about the study.

☐

I agree to take part in this research project and agree for my data to be used for the purpose of this study

☐

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected

☐

I am happy to be contacted regarding other unspecified research projects. I therefore consent to the University retaining my

☐

personal details on a database, kept separately from the

research data detailed above. The 'validity' of my consent is

conditional upon the University complying with the Data Protection Act and

I understand that I can request my details be removed from this database at any time.

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name).....

Signature of participant..... Date.....

Appendix 4: Confirmation letter from the University of Southampton



Mr Hend Aldobaikhi
School of Education
University of Southampton
University Road
Highfield
Southampton
SO17 1BJ

RGO Ref: 8691

06 August 2012

Dear Mr Aldobaikhi

Project Title Using Forum when Teaching Geography

This is to confirm the University of Southampton is prepared to act as Research Sponsor for this study, and the work detailed in the protocol/study outline will be covered by the University of Southampton insurance programme.

As the sponsor's representative for the University this office is tasked with:

1. Ensuring the researcher has obtained the necessary approvals for the study
2. Monitoring the conduct of the study
3. Registering and resolving any complaints arising from the study

As the researcher you are responsible for the conduct of the study and you are expected to:

1. Ensure the study is conducted as described in the protocol/study outline approved by this office
2. Advise this office of any change to the protocol, methodology, study documents, research team, participant numbers or start/end date of the study
3. Report to this office as soon as possible any concern, complaint or adverse event arising from the study

Failure to do any of the above may invalidate the insurance agreement and/or affect sponsorship of your study i.e. suspension or even withdrawal.

On receipt of this letter you may commence your research but please be aware other approvals may be required by the host organisation if your research takes place outside the University. It is your responsibility to check with the host organisation and obtain the appropriate approvals before recruitment is underway in that location.

May I take this opportunity to wish you every success for your research.

Yours sincerely

A handwritten signature in black ink, appearing to read "Dr. M. Prude".

Dr Martina Prude
Head of Research Governance

Tel: 023 8059 5058
email: rgoinfo@soton.ac.uk

Appendix 5: Parents' Consent Form



(To be translated into Arabic)

Dear parent of participant,

My name is Hend AlDobaikhi. I am a PhD student at the School of Education at Southampton University- UK. I am conducting a study titled: The impact of asynchronous e-learning on interaction and collaboration for Saudi high school students in the Geography curriculum.

I would like to ask you to agree to allow your daughter to participate in this study by using the designed forum and to be interviewed individually and with other participants (focus group).

All data collected will be anonymised to assure confidentiality.

If you have any questions or concerns relating to this study, please contact me or alternatively you may contact my supervisor at Southampton University at the following address:

John Woollard,

School of Education at Southampton University- UK

J.woollard@soton.ac.uk

The researcher

Hend Aldobaikhi

haa1v09@soton.ac.uk

Tel: 0557555000

Appendix 6: An example of thematic analysis

Relevant Text	Initial codes	Subthemes	Theme
'There are no interactions or communication between us in the geography lesson'.	Students do not have communication and interaction in geography class.	Students' perceptions of communication, interaction and collaboration between students in the classroom	Students' perceptions of their classroom experience
-Are there any interactions, outside the class to discuss the Geography lesson? -There is no interaction between us.	Poor communication and collaboration between students outside the class.	Students' perceptions of communication, interaction and collaboration between students outside the classroom and the school	
We only meet to look at the homework, for example, I may ask a classmate about a particular question, we sometimes ask each other about the important lessons to revise for the exam so that we are well-prepared	No communication and collaboration between students outside the school.		
We don't sit as close groups, I sit at the end of the class and my colleagues in the first desk, so there is a distance between us and we can't tell each other any information.	Physical environment in the class.	Perceptions of factors affecting Students' communication	
The real situation for us is that teacher enter the classroom, sometimes ask us about the last lesson, and sometimes not, then she give us the new lesson, after that gives us the homework and finally leave the classroom.	Teaching method in the class		
If the goal was to pass the exam and gain a university place, then this would be enough. But if the aim was to gain general knowledge and learning, this would be difficult or even impossible.	Poor background knowledge of the subject	Students' perception of their background knowledge	

Appendix 7: SOLO taxonomy Analysis of group 1

Group 1	Learning outcomes				
Learning objectives	Prestructural	Unistructural	Multi-structural	Relational	Extend abstract
Forests in Europe	<ul style="list-style-type: none"> - What is the largest forest in Europe? - I tried to find out the answer, but I could not, - I do not have any idea. 	<ul style="list-style-type: none"> - Białowieża forest in Poland is the largest forest. Can you make sure that this answer is correct? Because I am not sure. - Forests cover approximately half of the size of Europe. 	<ul style="list-style-type: none"> - It is the forest which is located in the north of Russia. It is not only the largest forest in Europe, but it is the largest forest in the whole world. It occupies 25% of the total forest area of the world. - Most of the forest trees of central and southern Europe were logged off, while of northern Europe still retains its large forests. 	<ul style="list-style-type: none"> - There are forests of evergreen broadleaf trees, in general, on the shores of the Mediterranean. This type of trees which include cork trees and olive trees, do not lose their leaves in the summer time. Many of these trees have leaves covered with wax to help them retain moisture well. 	<ul style="list-style-type: none"> - These trees are considered to be the main source for timber and paper industry in the continent. European governments regulate logging to protect forests from disappearing.
Tundra region and highlands	<ul style="list-style-type: none"> - Are there any heights in Europe? - What are the most important 	<ul style="list-style-type: none"> - It is characterised by cold climate. - It is treeless. 	<ul style="list-style-type: none"> - Tundra region and the highlands are characterised by cold climate and treeless. They cover most of the area near the coast of Europe, 	<ul style="list-style-type: none"> - Tundra region and highlands are characterised by cold climate and treeless, and they are 	<ul style="list-style-type: none"> - Water freezes on the surface of the ground in this area most months of the year. When the ice has melted, which has a height of between 30cm and 60 cm

	<p>mountains in Europe?</p> <p>- Are there any high peaks covered by snow in Europe?</p>		<p>which overlooks the coast of the Arctic Ocean.</p>	<p>treeless, because the water freezes on the surface of the ground in this area most months of the year.</p>	<p>during the short summer time in the Arctic, it leaves behind ponds and swamps, where tundra covers, in this season, algae, small shrubs, wild flowers and lichen. Farmers use parts of the tundra and high mountains as pastures for their livestock.</p>
<p>Where is Europe located?</p>	<p>-Is Europe bigger than Asia and America?</p> <p>- Why is it called Europe?</p>	<p>- Europe is a piece of land known as Eurasia.</p> <p>- Europe is one of the seven continents of the world.</p> <p>- Europe is relatively a small continent compared with the rest of the continents.</p> <p>- But Australia continent is smaller than it.</p> <p>- The term Europe is</p>	<p>- Europe covers about 10,180,000 square kilometers (7.1% of the Earth's surface).</p> <p>- Eastern border of Europe with Asia continent lies along the Ural Mountains.</p>	<p>-Eastern border of Europe with Asia continent lies along the Ural Mountains, while the border with Asia to the southeast is the Emba River, which is considered to be the boundary between the two continents.</p> <p>- Because of the differences on determining the distance of the width or the length of (the border in other words) Europe continent, the</p>	

		<p>originally derived from the Greek words which mean a broad face.</p> <p>- Geographically, Europe is considered to be a subcontinent or a large peninsula.</p>		<p>results of determination of the geographical centre of Europe is of a big difference.</p>	
<p>Steppes Regions In Europe</p>		<p>- Steppes regions are vast-open grasslands without any kind of boundaries or</p>	<p>- In Europe, there are two types of steppes regions. One of them is called steppe, while the other one is called the Great European Plain.</p>	<p>- The steppe region covers the area which stretches from the lower Danube region to the European part to the southwest of Russia and the west of Kazakhstan. The</p>	<p>- The other steppe region covers a large area of the Great European Plain and the middle part of the European sector of Russia.</p>

		<p>barriers.</p> <ul style="list-style-type: none"> - Where grasses grow in abundance more than any other plants. - In Europe, there are two types of steppes regions. 		<p>other steppe regions cover a large area of the Great European Plain and the middle part of the European sector of Russia.</p>	
<p>Republic of Bosnia and Herzegovina</p>	<p>- Where is Bosnia and Herzegovina located?</p>	<ul style="list-style-type: none"> - It is one country of the former Republic of Yugoslavia. - It is located in southern Europe. - It is a landlocked 	<p>- It is a country in south-eastern Europe located on the Balkan Peninsula.</p>	<p>- The mountains lie in the middle and the south of Bosnia, and the hills lie in the northwest, while the northwest of the country are flat. Bosnia is considered to be one of the largest geographical areas that have a moderate continental climate,</p>	

		country.		where it is hot in summer and cold with snow in winter.	
Finland	<ul style="list-style-type: none"> - Where is Finland located? - I have no idea, but it might be in Europe. 	<ul style="list-style-type: none"> - Their people are called Finnish. 	<ul style="list-style-type: none"> - Its capital is Helsinki, and they speak Finnish and Swedish languages. - It is the northernmost country located in the Alvenuskandah region in northern Europe. - It is bordered by Swede in the west, Norway in the north, Russia in the east and Estonia, via Gulf of Finland, in the south. 		

Appendix 8: SOLO taxonomy Analysis of group 2

Group 2	Learning outcomes				
Learning objectives	Prestructural	Unistructural	Multi-structural	Relational	Extend abstract
Climate of Europe	<ul style="list-style-type: none"> - Is Europe cold as we have heard? - What types of rains do fall on Europe? 	<ul style="list-style-type: none"> - It differs from one region to another. - Most parts of Europe have a mild climate. - Average rainfalls on most of the European countries, range between 50 cm and 150 cm per year. 	<ul style="list-style-type: none"> - Most of the continent is affected by western winds for the lack of mountain barriers. - Most annual rains over 200 cm; fall on the areas which directly lie on the west of the mountains, i.e., the western slopes of hills and mountains facing the western winds. - Europe has a more moderate climate than some parts of Asia and North America that lie on the same latitude. 		<ul style="list-style-type: none"> - Berlin is in Germany, Calgary is in Canada and Irkutsk is in the Asian part of Russia. They are almost located on the same latitude line. However, we find that the average temperature in Berlin is eight degrees more than the average temperature in Calgary. This average might increase by twenty two degrees in Irkutsk. The reason for this is the winds that blow across the continent from the Atlantic Ocean to mitigate the climate in Europe.

The factors that affect the climate of Europe		<ul style="list-style-type: none"> - Europe lies between latitudes 36-71 North. - Europe lies in the warm temperate regions and temperate cold regions. - The continent of Europe is far from hot, orbital and polar cold climate. 	<ul style="list-style-type: none"> - Climate of Europe is affected by five factors: the location, size, sea currents, atmospheric pressure and the topography of the continent. - The highlands, which are in a cross way from the east to the west towards the south of the Great European Plain, lead to the arrival of marine influences from the Atlantic Ocean to the east of the continent, while these highlands hamper the arrival of cold winds that come from the north to the south of the continent, and also hamper the arrival of the warm winds to the north of the continent. 	<ul style="list-style-type: none"> - As the continent of Europe is characterised by the length of its coastlines and the great number of meanders, these lead to the arrival of marine influences within the continent. The most important steam is the warm gulf steam that helps make the western coast of Europe warm, especially, in the winter 	
Plants in Europe	<ul style="list-style-type: none"> - Has Europe many forests? -Where is the Black Forest? And why is it called so? 	<ul style="list-style-type: none"> -Areas where plants grow are divided into three types. -The Black Forest is in 	<ul style="list-style-type: none"> - Plants in Europe are divided into three main types: <ol style="list-style-type: none"> 1- The forests, 2-The steppes, 3- The tundra regions and the highlands. - Most of the forest trees of the 	<ul style="list-style-type: none"> -It has been recently noted that the forest in Europe have emerged again, but on the other hand, it has appeared that there is a decline at the level of growth 	<ul style="list-style-type: none"> - Most of the forest trees of the central and southern Europe were logged off. These trees are considered to be the main source for timber and paper industry in the continent. European governments regulate logging to protect forests from disappearing.

		Germany.	<p>central and southern Europe were logged off, while northern Europe still retains its large forests.</p> <ul style="list-style-type: none"> - Boreal forests are called forests of needle-like leaves. - There are forests of evergreen broadleaf trees, in general, on the shores of the Mediterranean. -It is called the Black Forest in Germany for the dense growth of its trees which tend to the black colour rather than the green colour. 	of forest in other areas. The reason for this is likely to be rise in the soil acidity as a result of acid rains.	- In the seventeenth and eighteenth centuries, very large part of the temperate forests in Europe were destroyed. For example, large parts of the forest of England were destroyed to take advantage of wood in shipbuilding, and for energy and others. However, after relying on coal and oil as the primary source of energy and the use of iron on a large scale in the construction, all this led to relieve pressure on the forests.
Climate of Finland	- In the second group, the girls spoke of Finland. Is it possible to know more about the climate of Finland?	<p>- The climate of Finland is characterised by hot summer and harsh winter.</p> <ul style="list-style-type: none"> - The coldest winter days are in the south of the country. - The temperature degrees of the southern territories decrease in winter to 	<p>- Summer in Southern Finland lasts 4 months (from mid-May until mid-September). Semi-polar climate dominated in the north of Finland and is characterised by cold which is sometimes bitterly cold in winter, while is characterised by relatively hot in summer.</p> <ul style="list-style-type: none"> - Winter in northern Finland lasts for almost seven months, where snow covers the ground almost six months from October 	- Summer in the north is very short. It only lasts between 2-3 months. The most important factor influencing the climate of Finland is the geographical location of the country which is between latitudes 60 and 70 in the coastal area of Eurasia which	- A quarter of the territories of Finland <i>lie</i> within the Arctic Circle, where the sun shines in the middle of the night for several days whenever a person turns towards the north. In the far north of Finland, the sun always shines for a period of 73 consecutive days during the summer, and becomes completely absent for a period of 51 days during the winter so the climate of Finland is suitable for the cultivation of grain in the southern regions, but not in the north.

		<p>below -20</p> <p>- Summer in the north is very short. It only lasts between 2-3 months.</p>	<p>to early May.</p>	<p>has a peripheral continental climate according to the direction of the winds flow.</p> <p>-Finland is close enough to the Atlantic Ocean in order to come under the influence of the gulf stream, which explains the unusually warm climate in that latitude.</p>	
Austria	<p>- I would like to visit Austria, but I would like to know more about it.</p>	<p>- Some people call it a paradise on earth for its beauty and charming nature.</p> <p>- Heavy rain pours down all over the country.</p> <p>-Climate in Austria varies in three areas.</p> <p>- Alps affect the climate of Austria.</p>	<p>- Temperature rates between night and day as well as between summer and winter in the west and the north-west of the country; vary significantly more than in the east of the country.</p> <p>- Heavy rain pour down all over the country, but it decreases as we go towards the east</p> <p>- Each region in Austria has a different climate. There are the east, the Alps and the rest of</p>	<p>- Diversity of the terrain and the weather has led to the enrichment of the plants world, where plants littered plains and the highlands of the western regions of the diversified weather.</p>	

			<p>the country.</p> <ul style="list-style-type: none"> - Interior Alps area is located under the impact of weather of the internal Alps which has heavy rains _ short summer - long winter. - Austria is one of richest European countries in forests, where the forest area covers about 47%. 		
Plants in Albania		<ul style="list-style-type: none"> - More than a third of the territories of Albania (about 10,000 square kilometers (2.5 million acres) are forests. 	<ul style="list-style-type: none"> - More than a third of the territories of Albania are forests. -The country is very rich in plants. There are about 3,000 different types of plants grow in Albania. 	<ul style="list-style-type: none"> - As Albania is very rich in plants, where about 3,000 different types of plants grow, there are so many of which are used for medicinal purposes. 	<ul style="list-style-type: none"> -Based on the World Wide Fund for Nature and digital maps of the European ecological zones, which is financed By the European Environment Agency, the territories of Albania are divided into three ecological zones: The Iberian forests, the forests of Bendus Mountains and the forests of Dinaric mountains. These forests include a wide range of mammals such as wolves, bears, wild boar and chamois. -The Lynx animals, wild cats and skunks are rare animals, but they are still alive in some parts of the country.

Appendix 9: SOLO taxonomy Analysis of group 3

Group 3	Learning outcomes				
Learning objectives	Prestructural	Unistructural	Multi-structural	Relational	Extend abstract
Europe Location	-Is Europe a large continent?	Europe is divided into four main regions. - Europe is a large Peninsula. - Europe is the smallest continent in the world except for Australia.	- Europe is divided into four min regions; - North west mountains, The great European Plain, Central Highlands and Alps (The Northern and Western mountains).	-Europe is a huge peninsula extends westward from the north-west Asia, there is not any aqueous barrier separate between these two continents, so there are some geographers consider them as one continent and called it Eurasia.	There are other geographers say that Africa, Asia and Europe are one continent, and if there was not aqueous barrier between Africa and Asia before Suez Canal, they would called them Eurafrasia.
The Great European Plain	What are plains?	The European Plain is almost covering all European area.	-The European Plain is almost cover the European part of Russia and extends from Russia to France.	Also the European Plain in Russia extends from the north frozen ocean to Caucasus Mountains for more than 2,410km, and this European plain gradually narrows until it	The great European Plain is mainly consists of flat and undulating land interspersed with some hills. It includes some areas which are considered the most fertile agricultural lands in the

				<p>reaches to Belgium as its width becomes only 80km</p> <p>Parts of central highlands contain huge mineral wealth, especially in the center of Germany and the Czech Republic.</p> <p>- Population of the area ranging between less than 48 people per km² in Spain and France and twice or four times of this in parts of Germany and Czech.</p>	<p>world. The western side of this area is considered one of the most densely populated regions of the world.</p>
Alps	Where are Alps?	<p>-Extend through Europe from Spain to Caspian sea</p> <p>Alps include the highest and most beautiful mountains in Europe.</p>	<p>-In this area there is mountain range, as Sierra Nevada Mountains and the Pyrenees in Spain is forming barrier separate between Spain and France.</p> <p>-The world-famous Alpine covers the part of south-eastern France, North Italy, most of Switzerland, part of south Germany, Austria and north Slovenia.</p>	<p>The Highest peaks in this mountain range is Mount Albers, as its height is 5,633m above the sea level in the Caucasus Mountains. Agriculture has become concentrated in the low mountains, the extended plains and the wide valleys which surrounded by mountains series, also dense forests cover a lot of high cliffs and the green lawns located behind the forests are used for grazing.</p> <p>-Alps do not prevent communications between Europe parts (as there are many paths and tunnels).</p>	<p>Because of the beauty of nature and mountains, there has been impressive flows of tourists, as there are many parts of the area impress tourists, especially the Swiss Alps for ice skating.</p>

				<p>- Jaldobegn peak is the highest peak in Norway, as its height is 2,469m. As its soil is thin and severity of the slopes of the mountain declivity, mountains became convex and unsuitable for cultivation</p>	
Spain	<p>-Spain is considered one of the important countries in Europe, so we need to discuss it.</p>	<p>Spain is located in the south of Europe.</p>	<p>-Balearic islands and Canary islands which located in the Atlantic ocean are belonging to Spain.</p> <p>- Spain occupies the great part of Iberian Peninsula and surrounded by water by 88%.</p> <p>The north side is bordered by Pesky gulf, France and Andorra, in the south side is bordered by the Mediterranean Sea and the Atlantic Ocean as well, but from the west is bordered by Portugal. The British colony of Gibraltar is located in the far southern part of the country at the Strait of</p>	<p>Spain in kilometers per square is 504780</p> <p>Area in Miles per square is 194897</p> <p>Note: Spain is a little larger than the half of Egypt Space</p>	

			Gibraltar		
Coasts and islands and lakes	What is the greatest island in Europe?	<p>The greatest and most important island in Europe is Britain.</p> <p>The freshwater lakes in Europe is about 137,000 km²</p> <p>A map of Europe help us to identify the European countries, their borders and their terrains</p>	<p>Europe is characterized by irregular sea cost and zigzags where you find a series of small and large peninsulas.</p> <p>The main European peninsulas are: Scandinavia peninsula (Norway and Sweden), Gotland peninsula (Denmark), the Iberian Peninsula (Portugal and Spain), Apennine peninsula (Italy) and Balkan Peninsula (Albania, Bosnia and Herzegovina, Macedonia, Bulgaria, and Greece, parts of Turkey, Croatia, Slovenia and Yugoslavia).</p> <p>British islands- north and west the mainland of Europe- include Ireland, Orkney islands and Shetland islands. The other main islands in this area are Iceland and Froe islands.</p>	<p>The European coast is characterized by its length, as it is 60,957km; this is because of many zigzags. This is zigzag coast helped in the presence of natural harbors.</p> <p>The largest lake in the world which is salty Caspian Sea is located in the south-eastern side of Europe and partly in Asia. Although the Caspian Sea is so-called a sea, in fact it is a lake, as it is surrounded by lands from all sides.</p>	<p>The largest European freshwater lake is Ladoga Lake in the north-western side of Russia and it is 17,703km². In Finland, there are 60,000 lakes, making it known as the land of thousands of lakes. Here is the answer the second group who asked why Finland was called the land of lakes</p>
Italy	I heard that there is a	Yes there are two countries in Italy	Italy is located in the south of European continent and	Population in Italy is more than 60 million people, so it	-Italy is the fourth country in European Union in terms of

	country in the European Union	<p>Water Area: 2.4% of the total area</p> <p>Population is 60 Million inhabitants and it is the sixth country in terms of population in Europe, and it is the 23rd most populous country in the world</p>	<p>it consists of three main parts:</p> <p>-It consists of three main parts: The land related to Europe and two islands which are Sicily and Sardinia.</p> <p>-Total area is 301230 Kilometer per square, 294020km of it land and 7210 of it water.</p> <p>In the Italian land, there are two countries; Vatican and San Marino.</p> <p>On the north side it bordered by France, Switzerland, Austria and Slovenia, on the east side is bordered by Adriatic Sea, on the south side by Ionian Sea and the Mediterranean Sea and on the west side by Ligurian and Tyrrhenian Sea.</p>	considered the fourth country in the European Union in terms of populous and it is the 23 rd in the world in terms of population.	population. More than two-third of the country population live in cities, especially in the north. It is population is considered as the longest aging in the world, the age average in men (76 years) and women (83 years).
Animals in Europe	<p>Are the animals in Europe like the animals in the Arab countries?</p> <p>Is it allowed to kill</p>	<p>The European brown bear, which is the biggest bears kind, lives in Russia and in the north of Scandinavia.</p> <p>And we find that foxes and wolves spread across many regions in Europe.</p>	Elks, reindeers and many other kinds of deer live in parts of Europe which extend from the Mediterranean Sea to the Arctic.	Animals: most European wild animals live in areas hard to be reached, in areas where hunting is prohibited or reserves and national parks where citizens not allowed killing them. The European countries prohibit killing animals, except for those who are	European water rich with plenty of fish at the Atlantic coast, Baltic, Black Sea, Caspian Sea, Mediterranean Sea and Northern seas. Some people depend on fishing in their live like; anchovy, Cod, Flounder, Herring, Salmon, Sardines, Tuna, Trout and Sturgeon. In this area the

	animals in Europe as it happens in Arab countries?	<p>Pinnipedia lives at the coasts of the Arctic, Atlantic Ocean and at the Mediterranean Sea</p> <p>Elks, reindeers and many other kinds of deer live in parts of Europe which extend from the Mediterranean Sea to the Arctic.</p>		licensed and this is different from Arab countries.	sturgeon's eggs are used in making delicious food called caviar.
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Appendix 10: SOLO taxonomy Analysis of group 4

Group 4	Learning outcomes				
Learning objectives	Prestructural	Unistructural	Multi-structural	Relational	Extend abstract
Population Density	<p>How much is Europe population?</p> <p>-Girls, I expect that Britain is the largest country in terms of population, right or wrong?</p> <p>-why the population distribution is regular in the most of Europe countries?</p> <p>What is your explanation about the high number of</p>	<p>-Germany comes in the second place after Russia in terms of population.</p> <p>-population characteristics in Europe.</p> <p>-rising the number of elder, low number of deaths, low number of births and rising of cities' population due to industry.</p> <p>-More than 80% of population in Britain, Sweden and Norway live in the cities.</p> <p>-Europe is the third biggest</p>	<p>- There are about 708 millions live in Europe which is equal to one-eighth of world's population, including 108 millions live in the European part of Russia, and there is not any other European country with this number of population.</p> <p>- Vatican State is the smallest European country in terms of population; its population is the least comparing with any other country in the world, as live in it about Thousand people only.</p> <p>-The population distribution in Europe is regular because people in Europe do not give births so much, so you can find it regular. Europe is called the old continent, as there are not many youths due to the lack of births.</p>	<p>-There is not any other European country with this number of population. According to the expectations of United Nations' experts in 2000, Russia population is now reduced to be 133 million people. Putin, Prime Minister of Russia, said " Today, the population of Russia is 143 million people, and this is 10 millions more than the expects of experts, this is considered a demographic success"</p> <p>-The reason for the high number of the population in Russia is the low in deaths rate.</p>	<p>-Vatican is the smallest state in Europe in terms of population, not San Marino, as it is include the lowest population comparing with any other country in the world. There are 800 people live in it, and Vatican is the smallest state in Italy and had already spoken about the third set.</p>

	older people and fewer deaths?	world continents in terms of population.	<p>-San Marino is the least country in terms of population; its population is 32,404 people only.</p> <p>-Population density rate in Europe is about 67 people per km², the distribution of population in Europe is not equal as the rest of world continents, as the most parts of the continent are lower population density than the rate.</p>		
Dynastic groups		-Dynastic group consists of large numbers of people that which are almost have common skin color and other common physical characteristics.	<p>-in the past, anthropologists (Anthropology), scientists who are looking at the origin of the human race and ethnicities, customs and beliefs, classified the human race to three racial groups: Caucasian with white skin, Mongol with yellow skin and Negro with black skin. According to this classification system, European are included under the Caucasian group.</p> <p>- In the twentieth century, the most of anthropologists reject this classification as it is not a scientific classification. Now, most experts divide the human race into nine or ten main geographical elements. The majority of European are</p>		-Majority of northern European, like, Swedes, are characterized by white skin more than the southern European like, Italians. Also, the northern European are taller than the southern European. Besides, there are many Africans, Asians and others belong to other racial geographic groups live in Europe., they migrated to Europe for work seeking, and their numbers have been increased since the fifties, but they are still represent a small proportion of Europe population.

			belong to the dynastic geographic European group. European- generally- characterized by white skin more than any other dynastic around the world, and in the European groups itself.		
Italy population	How much is Italy population?	At the end of 2008, Italy population exceeded sixty millions people.	<p>-Italy is considered the sixth European Union countries in terms of population and the 23rd in the world.</p> <p>The population density of Italy is 199.2 people per km² and it is the fifth in the European Union countries. This records the highest density in the north of Italy; also the one-third of the country contains almost the total population.</p>	<p>Italy has seen growth in births rate at the beginning of the twenty-first century (especially in the northern regions) for the first time in years, in spite of before, it was thanks for the mass migration, mainly during the last two decades.</p> <p>The total fertility rate has been increased significantly during the past few years, thanks to births increase between the Italian women and the women who born abroad, as the rate jumped from being 1.32 child for each woman in 2005 to be 1.41 child in 2008.</p>	After the world War II, Italy enjoyed a long period of economic prosperity which led to a heavy displacement from countryside to cities, at the same time; the country was transformed from a country with wide migration to be a country where many migrants are being received. The fertility rate continued increasing until the seventies of the twentieth century, when the country fell below the replacement rate as one-fifth of Italians exceeded the age of 65 years as of 2008.
Sweden	Girls, I want to know more	-Sweden is a member in the	-Sweden is the third largest country in the European Union	- Stockholm, is the capital of Sweden and it	Sweden lost the most of its territories occupied by

	about Sweden	European Union since Jan.1st. 1995. Also it is a member in the Organization for Economic Cooperation and Development.	<p>in terms of area space (450,295 km²), and its population is about 9.4 Millions.</p> <p>- Sweden has a low population density of 21 people per square kilometer (53 per square mile), but the density increasing in the south half of the county. About 85% of the populations live in the urban regions; these numbers are expected to rise gradually as a part of the current urbanization process.</p>	<p>is the largest city in the country (its population is 1.3 million people in the capital area, and 2 millions in the major urban area. The most especial thing in Sweden is its educational progress. Also, Sweden follows a royal parliamentary regulation and a developed economy system. Also it occupies the first place in the world in the economist index for democracy and the seventh place in United Nation index for human development.</p>	<p>outside the Scandinavian peninsula during the eighteenth and nineteenth centuries, it is the eastern half of Sweden which is now Finland, the girls talked about Finland in the second group. Sweden transferred from a country that push people out after the World War I to a country that pull people in after the World War II. Immigration reached its highest proportions in 2008, people immigrated to Sweden, where 101 171 people in that year.</p>
European Cuisine	<p>-I want to know about the eating habits of Europeans?</p> <p>-Girls, I heard that the Italian coffee is more famous than pasta, is it</p>	<p>- The most famous dishes in Italy are; past, pizza, lasagna, focaccia and Ice Cream.</p> <p>-Coffee, more specifically the espresso, is considered the most prominent</p>	<p>-Usually in Europe, breakfast meal is consisting of baked food with butter and Jam, may accompanied with cold meat, or consisting of boiled or fried eggs, fried potatoes with a small amount of butter or oil, meat like sausage or bacon, or truffle and tomatoes. Usually drink tea or coffee with breakfast.</p> <p>Scottish cuisine is characterized</p>	<p>-In Norway, cooking is influenced by the sea and agriculture, as where salmon (fresh and frozen), herring (pickled or marinated) and trout and cod and other seafood offset by cheese dairy products and bread.</p> <p>-In Belarus, wheat rye bread is consumed, but</p>	<p>-Due to the location of Latvia on the Baltic, people consume fishes. Also the Latvian cuisine influenced by the neighboring countries. Their cuisine consists of agricultural products with meat as well, found in most dishes main meals. Pea and pork are considered key food in Latvia, as well as bread</p>

	<p>true?</p>	<p>cultural cuisine of Ital.</p> <p>-Kumpir is the Turks favorite meal.</p> <p>- One of the Swedes habits is having coffee, as it is an important thing for them. Each working hour, they have 15 minutes called coffee break.</p>	<p>by simplicity, and the favorite dishes are the herring, smoked salmon, beef, grilled mutton, oatmeal and haggis.</p> <p>-Belarusian cuisine consists mainly of vegetables, meat (especially pork) and bread. Every day, Belarusian eats a light breakfast meal and two big meals, as dinner is the biggest meal in the day. Popular drinks in Belarus Wheat vodka, which is a very light drink, made of rye flour or brown bread can be added to vegetables for making a cold soup.</p> <p>-Kumpir (grilled potatoes on the Turkish way) is considered one of the social features in Istanbul, which is the biggest city in Turkey. Ortakoy, the historic area in Istanbul, is considered the main center for Kumpir's fans, as when you enter this area you will directly see the kumpir's shops. Kumpir is a huge piece of grilled potato, loved by young before adults. Seller adds the extras on-demand to be a hearty delicious meal.</p>	<p>rye is more plentiful because of the hard conditions for wheat cultivation. To show hospitality, traditionally the host offers bread and salt when greeting the guest or visitor.</p> <p>-The modern Italian cuisine is developed through centuries of social and political changes, as its roots dating back to the fourth century BC. Dishes components change vary due to the regions; However, it has many regional dishes spread across the country. Cheese and wine are the main ingredients for cuisine; they play different roles at the regional and national levels in terms of diversity.</p> <p>-Spanish cuisine consists of a great variety of dishes that reflect the diversity of influences in the country. For a start,</p>	<p>made from barley.</p> <p>-What make Kumpir especial in Turkey from other fast food that it is rich in vitamins, minerals, protein and iron, which is so important for prevention of anemia. The aim of Kumpir's creators in Turkey was to provide healthy meal for those who spend most of their time outside. Many researchers pointed out that the cause of fast food spreading in Turkey, Kumpir is one of them, is the change of lifestyle, also the change of working and break hours, besides, getting out the house so much and reducing the time of family meeting on the table as in the past.</p>
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				seafood has the big share of the Spanish dishes because of the views of the country on the Mediterranean and Atlantic. Also the effects of different civilizations that have passed to Spain left its mark in the unique cuisine.	
Lifestyle in Europe	-How many languages in Europe?	<p>-In Europe, there are about fifty languages and more than a hundred dialects.</p> <p>The Europeans of the most educated people in the world. Most of them know how to read and write.</p>	<p>-There are major differences in lifestyles between the European East and West on the one hand, and between north and west on the other hand, also between city life and countryside. However, the customs and religious always different.</p> <p>-90% of Europe population knowing how to read and write, except in three countries; Malta, Portugal and Turkey part of which is located in Europe, learning people is less than 90%.</p> <p>-Education is differs from a country to another. For example, in Portugal, children have to spend six years in</p>	The communist governments of East Europe added new differences between east and west during their control, as the communists imposed an economic system described with its dominance on all production means, which clearly affected the technical, political and social activities and all life fields. However, at the end of eighties of the twentieth century, most of governments of Eastern Europe began to follow capitalist economic system and	-Many experts classified the world's languages to nine major linguistic families. All European almost speak languages belong to the Indo-European language, which is considered the largest group of languages. No one knows where the first Indo-European group is arisen, but probably, it began in the northern region of The Black Sea. The Indo-European family has three major branches in Europe; Baltic Slavic, Germanic languages, and Romance languages.

			<p>schools, while in Belgians; children have to spend 12 years at least in schools. However in France, education system is centralized at maximum limit, as it is run by the country's national government. In Switzerland, the governments of the states supervise the education systems. Most of the children of northern states of west Europe like, Britain, Norway and Sweden, have the same education till they reach fifteen or sixteen. In this age, some of them leave school, some attend vocational schools, and others pursue their academic studies to qualify themselves for university education.</p>	<p>adopt Western political patterns (liberal) in the rule system.</p>	
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Appendix 11: SOLO taxonomy Analysis of group 5

Group 5	Learning outcomes				
Learning objectives	Prestructural	Unistructural	Multi-structural	Relational	Extend abstract
The Aims of the Monetary Policy of the European Union	-Hi Girls, today, I brought to you information about Euro system.	-The Board of Governors present a quantitative definition of price stability " Achieving an annual increase in the record index that coordinate the consumer prices for the euro area is less than 2%"		-The monetary policy of Euro system aims to maintain the prices stability and support the general economic policy of the European Union with giving priority to price stability as it is the most important terms needed for increasing production, create more job opportunities and achieve a high standard of living.	-The only aim of the monetary policy in Euro area is to maintain price stability due to the article 105 of Maastricht Treaty, and due to the protocol of the main system of European Central Banks.
	-Hi Girls, Here is small	-Since the beginning of	-The most important fields of industrial partnerships were those related to air		

European Common Industries	information hoping to be helpful for you.	nineties, there were European joint industrial projects in many fields	space industries. There were four countries came together and made an airplane, which was the Airbus aircraft. -Building Ariane Rocket which brought together the countries of European Union, especially France.		
The evaluation Steps of the European Monetary System	-When countries stated to use Euro?	-Euro was known as ECU. -The idea of creating a monetary and economic union is an old idea emerged in the fifties of the last century.		-Although the united European currency (Euro), which known before as ECU, was not in the form of paper or coin currency since its emerge, from the practical side, it enjoying the properties of money, as it is considered an account unit used as a unit for accounting, exchanging and reserves between central banks, it is considered a main factor in the European monetary system, as it is composed of a basket of currencies of member States	-The idea of creating a united currency was not successful because of the global system of (Bretton Woods) to fix the exchange rate, which restrain the establishment of a separate monetary system in Europe. After the collapse of this system, increase the deficit in the US balance of payments, and the decrease of dollar 10% in February 1971, the need to issue an independent European monetary union has emerged.
Italy currency	-Girls spoke about Italy in	-It is (LIRA) in Italian	-Between 1999 and 2002, Lira was a support national currency beside Euro. However, in this period, Lira was most widely used because of the lack	-Italian banknotes were not commonly used because of the huge numbers of	

	the second group, and now i need to know more about its currency.	<p>-Lira was the currency of Italy between 1861 and 2002.</p> <p>-Also, Lira was the national currency during the period of the royal rule of Italy.</p> <p>"Regnod'Italia</p>	<p>of variety of Euro coins.</p> <p>-In addition of its use in Italy, it was used in both San Marino and Vatican, but it was not the official currency in the Commune Campione de Italia in the northern Italy.</p>	zeros, and the attempts of modifying them were not successful due to political reasons, until the submission of Euro, which had an impact in reducing the huge numbers of zeros in Lira.	
The European Economy	-Is Europe Economically better than America?	<p>-The value of the European economic production is considered much higher than in any other continent</p>	<p>-The economy of the most European countries is highly developed, it includes Europe production of manufactured goods, machinery and steel.</p> <p>-The vast fertilized agricultural lands of Europe produce huge quantity of wheat and other agricultural crops.</p> <p>-There is a widespread of commercial exchange between the European countries. Many international trade organizations worked on trade development. The trade organizations of Europe include the European Union and</p>	<p>-For years, the economy of the eastern European countries took the communist principles as basis for them. Under the communist system, the country has dominated the completely the land, production elements, and goods and services distribution.</p>	<p>-The most economic activities of west Europe fall under the system of private property, far from state control. However the government also manages some projects, which produce the necessary products and offer necessary services, these projects include, railway, and in some other cases, it include automotive industry. In the eighties of the twentieth century, some governments began to sell such projects to</p>

			the European Free Trade Union.	The government of east Europe, in the late eighties of the twentieth century, began to take necessary steps towards increasing private property for economic activities of the country.	the private sector.
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